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Quast, J.C.

April 17 - July 17, 1948

Baja California

Catalogue nos. 1-474

Journal

Species Accounts

Birds

Mammals

Reptiles







Catalogue







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1948

# Catalog

1.

April 6 Side Cocopah mts, 21 mi SSE Mexicali, Baja California

- 1 ♀<sup>No</sup> Emb. *Dipodomys merriami*, 220-130-34-13-10, 25.2g  
2 ♂ *Dipodomys merriami*, 256-161-39-15-11, 39.3g

April 8 Punta San Felipe, 50± ft, Baja California

- 3 ♀<sup>No</sup> Emb. *Peromyscus crinitus*, 184-105-19-19-15, 14.0g  
4 ♂ " " , 170-97-20-20-16, 12.5g  
5 ♂ " " , 172-106-20-20-18, 13.5g  
#7 ♂ *Perognathus spinatus*, 176-104-20-8-6, 12.1g  
#6 ♂ " " , 176-66-21-8-6, 12.7g

April 9 Punta San Felipe, 50± ft, Baja California

- 8 ♀<sup>No</sup> Emb. *Neotoma lepida* 297-142-31-32-30 100.0g  
9 ♀ " " " 300-149-29-34-29 115.2g  
10 ♂ *Peromyscus crinitus* 177-102-19-19-18 14.0g  
11 ♂ " " 175-102-21-19-17 12.8g  
12 ♀<sup>No</sup> Emb. *Perognathus formosus* ~~penicillatus~~ 194-114-26-9-6 15.1g  
13 ♀ " " " 155-78-25-9-7 14.8g  
14 ♂ " " 186-110-25-10-7 16.6g  
15 ♀<sup>No</sup> Emb. *Peromyscus crinitus* 157-90-18-19-17 10.2g  
16 ♀ " " " 174-104-20-20-17 11.4g  
17 ♂ " " 169-98-19-20-17 11.4g  
18 ♀<sup>No</sup> Emb. *Perognathus formosus* 199-112-25-10-6 16.2g  
19 ♀ " " " 200-113-25-9-7 17.5g

April 10 Punta San Felipe, 50± ft, Baja California

- 20 ♀<sup>No</sup> Emb. *Perognathus formosus* 192-112-25-10-7 19.1g  
21 ♀ " " " 189-114-25-10-7 18.0g  
22 ♀ " " " 198-120-25-9-7 17.8g  
23 ♂ " " 193-112-26-10-8 20.8g  
24 ♂ " " 166-95-22-9-6 12.0g







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2.

## April 10 Punta San Felipe, 50<sup>±</sup> ft, Baja California

25	♀ <sup>No</sup> embryos	<i>Perognathus spinatus</i>	164-93-21-8-6	10.7g	
26	♀	"	"	138 <sup>±</sup> -70 <sup>±</sup> -21-8-5	9.5g
27	♀	"	"	164-87-20-8-5	11.5g
28	♀	"	"	181-112-22-8-6	12.8g
29	♀	"	"	172-97-22-8-5	11.8g
30	♀	"	"	105 <sup>±</sup> -39 <sup>±</sup> -22-8-6	10.6g
31	♂	"	"	178-107-22-8-6	11.8g
32	♂	"	"	147 <sup>±</sup> -73 <sup>±</sup> -22-7-4	10.9g
33	♂	"	"	170-99-22-9-5	10.9g
34	♂	"	"	150 <sup>±</sup> -80 <sup>±</sup> -22-8-5	11.7g
35	♀ <sup>No</sup> emb.	<i>Pipistrellus hesperus</i>	62-27-6-8-9	2.3g	
36	♂	<i>Pipistrellus hesperus</i>	67-26-5-7-9	2.6g	
37	♀ <sup>No</sup> emb.	<i>Peromyscus erinitus</i>	148 <sup>±</sup> -77 <sup>±</sup> -21-19-15	10.9g	
38	♂	"	"	162-95-19-20-18	9.3g

## April 11 Punta San Felipe, 50<sup>±</sup> ft, Baja California

39	<i>Callisaurus draconoides</i>	11.4g
40	"	5.0g
41	"	9.7g
42	<i>Dipsosaurus dorsalis</i>	10.7g
43	"	16.7g

## April 13 9 mi W. Punta San Felipe, 200<sup>±</sup> ft, Baja California

44	♂	<i>Perognathus spinatus</i>	182-108-22-8-6	11.0g
45	♂	<i>Perognathus formosus</i>	200-116-25-9-7	17.2g
46	♀	<i>Peromyscus erinitus</i>	165-98-19-19-18	10.5g

## April 14 El Mayor, 300 ft, Rio Hardy, Baja California

47		<i>Cnemidophorus tesselatus</i>	15.1g
El Mayor, 30 mi. Rio Hardy, Baja California			
48♀		<i>Peromyscus eremicus</i>	194-106-21-19-18 25.4g
49♀		<i>Perognathus spinatus</i>	185-112-21-8-5 10.6g







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April 14 El Mayor, 30 ft, Rio Hardy, Baja California

50 ♀ *Peromyscus crinitus* 173-101-19-19-16 11.9g

April 16 Cerro de Centinela 300 ft, 13 mi WSW Mexicali  
Baja California

51 ♀ *Peromyscus crinitus* 174-109-19-19-16 11.6g

52 ♂ " " 159-95-18-17-16 10.1g

53 ♂ " " 155-91-18-19-16 10.4g

54 ~~#~~ ♂ *Perognathus spinatus* 161-101-19-8-5 7.7g

55 ♂ *Perognathus baileyi* 193-106-27-10-7 21.8g

56 ♂ " " 176-103-25-9-7 14.0g

57 ♂ " " 164<sup>+</sup>-80<sup>+</sup>-25-9-7 16.6g

58 ♀ *Perognathus spinatus* 109<sup>+</sup>-41<sup>+</sup>-21-8-6 10.0g

59 ♀ *Peromyscus crinitus* 168-100-19-19-17 10.8g

April 17 Cerro Prieto 30 ft 20 mi SSE Mexicali, Baja Calif.

60 *Dipsosaurus dorsalis* 75.6g

61 " " 66.7g

62 " " 55.5g

63 " " 10.4g<sup>+</sup>

64 *Cnemidophorus tesselatus* 13.5g

April 18 Cerro Prieto 30 ft 20 mi SSE Mexicali, Baja Calif.

65 ♀ *Peromyscus eremicus* 174-90-19-19-17 23.2g

66 ♀ " " 182-92-21-20-17 29.1g

67 ♀ *Perognathus spinatus* 142-80-19- --- 10.1g

68 ♂ " " 176-105-21-9-6 13.4g

69 ♂ *Perognathus penicillatus* 186-109-25-10-7 23.0g

70 ♀ *Perognathus spinatus* 168-101-21-8-5 9.6g

71 ♀ *Perognathus penicillatus* 182-96-24-9-6 19.0g

72 ♀ " " 170-99-23-9-6 17.6g







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April 18 Cerro Prieto 30 ft 20 mi SSE Mexicali Baja Calif.  
73 ♀ *Perognathus penicillatus* 196-108-25-9-6 21.0g  
74 ♂ *Perognathus baileyi* 195<sup>+</sup>-106<sup>T</sup>-25-11-7 22.7g  
75 ♂ *Perognathus penicillatus* 167-95-24-18-6 14.7  
76 ♂ *Perognathus spinatus* 157-93-21-8-5 9.0g  
77 ♀ No Emb. *Pipistrellus hesperus* 73-28-6-11-10 3.3g  
78 ♀ No Emb. *Tadarida mexicana* 91-32-11-17-15 9.4g

April 20 ~~Alaska~~ 4400 ft Baja California  
79 *Scalopus orcutti* 35.9g  
80 *Scalopus* 17.7g

April 21 Agua Hedionda 32°30'N 116°16'W Baja California  
81 ♀ *Dipodomys agilis* 253-156-43-15-12 52.4g  
82 ♀ *Peromyscus californicus* 231-134-28-26-24 35.9g  
83 ♂ " " 211-128-25-24-22 38.0g  
84 ♀ *Peromyscus maniculatus* 168-78-20-17-15 23.0g  
85 ♂ " " 162-75-20-19-17 25.7g  
86 ♂ " " 161-82-21-18-16 19.4g

April 24 San Fernando Mission 1500 ft Baja California  
87 ♂ *Peromyscus maniculatus* 147-65-20-17-15 17.5g  
88 ♂ *Reithrodontomys megalotis* 134-79-18-15-13 9.9g  
89 ♀ ♂ " " 129-73-17-15-12 8.0g  
90 ♀ ♂ " " 125-69-17-15-12 6.9g

April 25 12½ mi by road south of El Marmol 2200 ft Baja California  
91 ♀ 1 Emb. 18 mm *Dipodomys merriami* 238-147-35-15-10 37.0g  
92 ♂ " " 238-144-35-15-11 40.6g  
93 ♀ No Emb. *Dipodomys agilis* 260-154-39-16-12 50.0g  
94 ♀ No Emb. *Perognathus fallax* 185-109-24-9-6 14.8g







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April 26 Mina La Fortuna 2350 ft 2 mi N Laguna Seca Chapala Baja Calif

95 ♂ Antrozous 112-43-12-29-25 14.9g

Wingspread 350 mm.

96 ♀ 2 Emb. 5 mm " 108-44-12-30-26 16.5g

Wingspread 350 mm.

97 ♂ Chononycteris mexicana 78-10-12-16-11 19.9g

Wingspread 335 mm.

98 Uta stansburiana 3.6g

April 28 30 mi SE. Mesquital 600 ft Baja California

99 ♂ Sylvilagus bachmani 284-20-65-68-80 418.0g

100 ♀ No Emb. Lepus californicus 515-72-116-128-146 426g

101 ♂ Dipodomys merriami 255-154-38-14-10 32.1g

102 ♂ " " 248-153-37-14-11 33.4g

April 30 Mission San Jacinto 500 ft Baja California

103 ♂ Tadarida mexicana 90-35-11-18-12-296<sup>EX</sup> wt 8.5g

104 ♂ " " 92-35-10-17-13-300 " 8.9g

105 ♂ " " 92-34-10-18-14-302 " 10.1g

106 ♂ " " 91-34-10-18-14-312 " 10.8g

107 ♀ No Embryos " " 87-32-10-17-13-295 " 9.3g

108 ♀ " " 87-32-10-19-14-298 " 9.5g

109 ♀ " " 89-34-11-18-13-310 " 9.8g

May 2 Mulege 25<sup>+</sup> ft Baja California

110 ♀ No Emb. Tadarida americana 91-33-10-19-14-298<sup>EX</sup> wt 9.7g

111 ♀ 1 Emb 3 mm " " 92-32-10-17-12-291 " 9.9g

112 ♀ 1 Emb 6 mm " " 90-33-10-18-13-304 " 10.0g

113 ♀ 1 Emb 3 mm " " 90-33-11-18-13-292 " 10.1g

114 ♀ 1 Emb 4 mm " " 88-34-9-18-14-303 " 10.1g

115 ♀ 1 Emb 5 mm " " 89-34-10-18-14-305 " 11.0g







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May 2 Mulege 25<sup>+</sup> ft Baja California

116 ♀ No Embryos *Myotis yumanensis* 74-32-8-14<sup>m</sup>-10<sup>c</sup>-216<sup>ex</sup> wt 3.4g

117 ♀ 1 Emb. 2<sup>mm</sup> " " 69-31-8-14-12-221 " 3.4

118 ♀ No Embryos " " 74-30-8-15-11-214 " 3.5

119 ♀ " " " " 73-33-9-14-11-219 " 3.5

120 ♀ " " " " 71-32-8-13-11-220 " 3.8

121 ♀ 1 Emb 4 mm " " 73-32-9-15-11-230 " 3.9

122 ♀ No Emb. " " 69-33-9-14-11-216 " 4.3

Killed and prepared May 3 123 ♀ No Embryos <sup>Skull only</sup> " " 72-33-8-13-10- — " 3.3

124 ♀ " " " " 77-34-10-13-11-225 " 3.6

125 ♀ " " " " 72-34-10-14-12-220 " 3.7

126 ♀ " " " " 75-35-10-13-12-222 " 3.7

May 4 The following specimen caught by Dr. Benson.

127 ♂ Testes 27mm *Dipodomys merriami* 244-148-40-15<sup>m</sup>-10<sup>c</sup> wt 46.6g  
<sup>1/2 mile South Mulege, 100<sup>+</sup> ft Baja California</sup>

Put up 128 ♂ *Macrotus californicus* 87-33-13-33-27-319<sup>ex</sup> wt 10.0g

and 129 ♂ " " 88-32-14-32-26-322 " 10.2

weighed 130 ♂ " " 88-33-13-30-28- — " 11.8

May 5 131 ♂ *Moormoopa megalophylla* 84-24-11-15-6- — " 12.7

May 5 Bahia Concepcion 13 mi SE Mulege Baja California

132 ♂ Testes 14mm *Perognathus spinatus* 176-104-21-9-6 wt 12.2g

133 ♂ Testes 7mm " " 189-111-22-9-6 " 12.4

134 ♀ No Embryos " " 189-114-22-8-6 " 12.0

135 ♀ " " " " 179-109-21-9-5 " 11.0

136 ♀ 2 Emb. 4mm *Peromyscus eremicus* 181-96-19-19-17 " 14.4

137 ♀ 2 Emb. 11mm " " 184-100-20-19-17 " 15.3

138 Rattlesnake wt 44.4g

139 Skull of rodent contained in above (#138) ♂ *Perognathus spinatus*







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May 6 Bahía Concepcion 13 mi S.E. Mulege Baja California

140	♂	Testes 5mm	Perognathus arenarius	136-81-19-8-5	wt 8.3g
141	♂	Testes 9mm	"	130 <sup>+</sup> -64 <sup>+</sup> -20-8-6	" 10.0
142	♂	Testes 9mm	"	139-78-22-8-6	" 10.1
143	♂	Testes 9mm	"	152-90-22-8-5	" 10.2
144	♂	Testes 9mm	"	156-91-21-8-5	" 10.3
1465	♂	Testes 10mm	"	156-90-22-8-6	" 10.9
1476	♀	1 Emb. 11mm	"	150-85-20-8-5	" 10.0
1487	♀	No Embryos	Perognathus baylei	191-98-26-9-7	" 23.7
1498	♀	"	Peromyscus eremicus	170-96-18-18-16	" 16.4g

May 7 Same location.

149	♀	No Embs	Dipodomys merriami	256-162-39-15-12	wt 35.2g
150	♂	Testes 15mm	Perognathus baylei	181-93-25-10-7	" 23.0
151	♂	Testes —	Perognathus spinatus	176-106-20-8-5	" 11.5
152	♂	Testes 13mm	"	177-99-22-9-6	" 14.6
153	♀	No Embs.	"	169-100-21-9-6	" 10.3
154	♂	Testes 9mm	Perognathus arenarius	161-97-22-8-6	" 11.8
155	♀	No Embs.	"	157-93-22-8-6	" 8.5
156	♀	2 Emb. 6mm	"	143 <sup>+</sup> -83 <sup>+</sup> -21-8-6	" 9.3

May 8 Rancho Cadeje SW end Bahía Concepcion Baja Calif.

157	♂	Testes 15mm	Perognathus spinatus	164-95-20-9-6	wt 12.2g
158	♂	Testes 11mm	"	178-104-21-10-6	" 13.6g

May 9 San Jose de Comodoro 700 ft Baja California

159			Cnemidophorus tessellatus		34.4g
160			Streptosaurus		33.2g

May 10 Same Location

161	♂		Eptesicus fuscus	94-42-10-15-12	wt 6.1g
162	♂		"	92-34-8-13-11	" 9.5g







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May 10 San Jose de Comondou 700 ft Baja California

163 ♂ *Pipistrellus hesperus* 68-25-5-12-8-<sup>m</sup>-<sup>c</sup>-<sup>ev</sup> wt 2.6g

164 ♀ No Embs *Peromyscus eremicus* 182-114-21-17-14 " 15.8

165 ♀ " " " 189-110-21-20-17 " 16.2

166 ♀ " " " 192-111-21-19-18 " 17.3

167 ♀ " " " 200-116-21-20-16 " 18.1

168 *Phyllodactylus unctus*

169 *Uta* — wt 2.3g

May 11 Pozo Grande 25<sup>+</sup> ft 25°46'N 112°02'W Baja California

170 *Bufo punctatus* wt 7.7g

171 ♂ *Eptesicus fuscus* 87-36-8-12-11<sup>m</sup>-<sup>c</sup>-266<sup>ev</sup> " 7.7g

May 13 Santa Ana Arroyo de Los Viejos, 25<sup>+</sup> ft 24°03'N 110°58'W, Baja California

172 ♂ *Myotis californicus* 71-36-7-13-11<sup>m</sup>-<sup>c</sup>-<sup>ev</sup> wt 3.0g

May 14 4 miles north of La Paz, Sea Level, Baja California

173 *Cnemidophorus hyperythrus* —

174 *Uta stansburiana* wt 2.0g —

175 ♀ No Embs *Citellus leucurus* 201-69-36-12-6 wt 67.5g

176 *Uta stansburiana* —

May 15 Same Location

177 ♂ Testis 22mm *Neotoma lepida* 291-141-34-32-30 wt 137.4g

178 ♀ 2 Embs 7mm *Peromyscus eremicus* 166-99-18-17-15 " 11.7g

179 ♂ Testis 6mm " " 154<sup>+</sup>-81<sup>+</sup>-19-19-16 " 13.1g

180 ♂ Testis 16mm " " 176-99-19-19-15 " 15.0g

181 ♂ Testis 15mm " " 181-100-19-20-18 " 18.6g

182 ♂ Testis 8mm *Perognathus spinatus* 179-100-20-9-6 " 14.8g

May 16 Same Location.

183 ♀ *Peromyscus eremicus* 172-96-19-18-16 wt 14.8g

184 ♂ *Perognathus spinatus* 181-102-23-10-2 " 15.6g







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May 17 Triunfo, 1700 ft Baja California

185	♂		<i>Pipistrellus hesperus</i>	66-27-6-12-10-188 <sup>m c ex</sup>	wt. 2.4g
186	♀	2 Emb. 8mm	"	74-30-6-11-9-206	" 3.7
187	♂		<i>Perognathus spinatus</i>	191-107-23-10-7 <sup>m c</sup>	wt. 19.4g
188	♂	Testes 8mm	"	173 <sup>+</sup> -87 <sup>+</sup> -24-10-7	" 19.5g
189	♂		"	190-103-24-9-6	" 19.6
190	♂	Testes 10mm	"	204-117-25-10-7	" 20.7
191	♂		"	206-115-24-11-7	" 21.1
192	♂		"	201-112-25-11-8	" 23.2
193	♀	No Embos.	"	168 <sup>+</sup> -82 <sup>+</sup> -25-11-7	" 16.2
194	♂	Testes 17mm	<i>Perognathus baylei</i>	186 <sup>+</sup> -95 <sup>+</sup> -24-10-7	" 27.3
195	♀	1 Emb. 20mm	"	153 <sup>+</sup> -64 <sup>+</sup> -25-10-7	" 23.6

196

*Bufo punctatus*

May 18 Same Location

197	♀	2 Emb. 7mm	<i>Pipistrellus hesperus</i>	71-29-5-12-9-200 <sup>m c ex</sup>	wt. 3.4g
198	♀	2 Emb. 8mm	"	66-28-5-12-9-—	" 3.5g
199	♀	No Emb.	<i>Eptesicus fuscus</i>	99-42-9-16-12-294	" 9.2g
200	♂	Testes 15mm	<i>Perognathus spinatus</i>	195-115-22-10-7 <sup>m c</sup>	wt. 17.8g
201	♂	Testes 8mm	"	201-111-25-10-7	wt. 27.0g
202	♀	No Embos.	"	113 <sup>+</sup> -36 <sup>+</sup> -24-9-6	" 15.8g
203	♀	" "	"	138 <sup>+</sup> -59 <sup>+</sup> -24-10-7	" 17.0
204	♀	" "	"	174 <sup>+</sup> -92 <sup>+</sup> -23-10-6	" 18.4
205	♀	Lactating No Embos.	"	185-102-23-10-8	" 19.6
206	♂		<i>Peromyscus eremicus</i>	206-125-21-19-16	" 16.4
207	♀	No Emb.	"	190-105-20-18-16	" 18.7
208	♂	Testes 12mm	<i>Perognathus spinatus</i>	180-109-24-10-6	" 18.4

May 19 Same Location

209	♂		<i>Eptesicus fuscus</i>	94-43-9-15-10-— <sup>m c ex</sup>	wt. 8.3g
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May 19 ~~Trinidad~~ 1700 ft. Baja California.

210	♀		<i>Eptesicus fuscus</i>	105-46-10-16-11- <sup>m</sup> - <sup>c</sup> - <sup>ex</sup>	wt. 11.7g
211	♀	— No Skull	" "	104-42-9-14-11- <sup>m</sup> - <sup>c</sup> - <sup>ex</sup>	" 10.0g
212			Poorwill		wt. 34.1g
213	♀		<i>Bufo punctatus</i>	contained eggs.	
214	♀		Roadrunner	Stomach contained large <i>Cnemidophorus</i>	wt. 272.7g
215	♀	No Embs.	<i>Citellus leucurus</i>	221-74-38-12-5	wt. 94.3g
216	♀	4 Embs 21 mm	" "	204-55-38-12-5	wt. 120.9g

May 20 Same Location.

217	♀	No Embs	<i>Myotis velifer</i>	91-42-9-14-13-268 <sup>m</sup> <sup>c</sup> <sup>ex</sup>	wt. 6.4g
218	♀	" "	<i>Eptesicus fuscus</i>	91-35-9-16-14-295	wt. 8.9
219	♀	" "	" "	104-42-9-15-11-298	" 11.4
220	♂	Testes 9 mm	<i>Perognathus spinatus</i>	184-106-23-10-7 <sup>m</sup> <sup>c</sup>	wt. 16.6g
221	♂	Testes 9 mm	" "	184-100-23-11-7	" 18.1
222	♂	Testes 9 mm	" "	166 <sup>+</sup> -87 <sup>+</sup> -24-10-6	" 21.8
223	♀	No Embs	" "	153 <sup>+</sup> -75 <sup>+</sup> -24-10-6	" 17.4
224	♀	No Embs	<i>Peromyscus eremicus</i>	180-109-21-19-17	" 17.0

May 20 1 mi. E. of San Antonio, Baja California

225	♀		<i>Leptonycteris</i> (?)	72-0-15-16-12-390 <sup>m</sup> <sup>c</sup> <sup>ex</sup>	wt. 20.0g
226	♀		"	69-0-14-16-11-380	" 20.0g
227	♀		"	72-0-14-16-11-380	" 20.4g
228	♀		"	66-0-15-16-11-340	" 22.7g
229	♀		"	70-0-15-17-12-385	" 22.7g
230	♂		<i>Macrotus californicus</i>	81-32-12-26-24-310	" 9.5g
231	♂		" "	89-35-12-32-26-—	" 10.9g
232	♂		" "	86-34-10-30-25-320	" 11.6g
233	♂		" "	91-36-11-31-26-325	" 11.6g
234	♂		" "	86-37-12-32-26-340	" 11.7g







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(1)

May 21 6 mi ESE San Antonio, 1200 ft, Baja California  
235 ♂ Elf Owl wt. 35.4g

May 23 Buena Vista, 25<sup>+</sup> ft, 23°38'N, 109°40'W, Baja California  
236 ♂ *Myotis californicus* 77-40-7-13-11-232<sup>m c ex</sup> wt. 3.1g  
237 ♀ 1 Emb, 10mm " " 78-37-7-13-11-219 wt. 3.1g  
238 ♂ Testes 7mm *Perognathus spinatus* 185-111-23-10-7<sup>m c</sup> " 15.7g  
239 ♀ Lactating No Embs. " " 144<sup>+</sup>-65<sup>+</sup>-22-10-7 " 14.6g

May 24 Same Location.

240 ♀ 1 Emb, 8mm *Tadarida mexicana* 95-32-8-18-12-298 wt. 8.8g  
241 ♀ No Embs. *Eptesicus fuscus* 100-41-8-16-11-298 " 9.7g  
242 ♀ 2 Emb, 4mm " " 103-45-8-15-13-307 " 10.0g

May 24 Las Cuevas, 23°34'N, 109°39'W, Baja California

243 ♂ *Natalus mexicanus* 92-54-8-14-11-270 wt. ~~4.5g~~ 5.0g  
244 ♀ 1 Emb, 14mm " " 97-52-8-14-11-265 " 5.5g  
245 ♀ 1 Emb, 14mm " " 95-52-9-15-11-270 " 5.3g  
246 ♀ 1 Emb, 15mm " " 92-51-8-14-11-264 " 5.8g  
247 ♀ 1 Emb, 14mm " " 90-50-7-15-11-272 " 5.3g  
248 ♀ 1 Emb, 14mm " " 93-54-7-14-11-268 " 5.3g  
249 ♀ 1 Emb, 15mm " " 98-53-8-14-11-267 " 5.0g  
250 ♀ 1 Emb, 14mm " " 95-52-7-14-11-268 " 5.2g  
251 ♀ 1 Emb, 14mm " " 95-53-8-14-11-268 " 5.4g  
252 ♀ No Embs " " 92-47-7-14-11-267 " 4.5g

May 25 El Carrisalito, 1400 ft, 5 mi N Santiago, Baja California

253 ♀ 2 Emb, 10mm *Pipistrellus hesperus* 72-27-6-12-10-200 wt. 3.8g  
254 ♀ 2 Emb, 7mm *Eptesicus fuscus* 104-43-10-17-13-310 " 8.5g  
255 ♀ No Embs. " " 100-41-11-17-12-307 " 9.1g  
256 ♀ Two Embs, 5mm " " 106-45-10-16-12-310 " 9.5g  
257 ♀ 1 Emb, 22mm *Macropterus californicus* 92-39-13-33-27-330 " 11.6g







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May 25 El Carrisalito, 1400 ft 5 mi N. Santiago, Baja California

258 ♂ *Antrozous minor* 108-44-12-29-23-352<sup>ex</sup> wt 14.8g

259 ♂ " " 114-47-11-29-24-344 " 15.3g

260 ♂ " " 108-41-12-30-23-345 " 15.4g

261 ♂ " " 111-46-11-28-23-350 " 15.5g

May 26 Same Location

262 ♀ 2 Emb. 37mm *Neotoma lepida* 291<sup>+</sup>-118<sup>+</sup>-34-31-27 wt 178.5g

263 ♂ Testes 19mm " " 309<sup>+</sup>-131<sup>+</sup>-36-30-29 " 166.9g

May 27 Same Location

264 ♀ 1 Emb. 13mm *Myotis californicus* 78-39-7-13-12-<sup>ex</sup> wt 3.1g

265 ♀ 2 Embs. 9mm *Pipistrellus hesperus* 73-29-6-11-10-212<sup>ex</sup> " 3.3g

266 ♀ 2 Embs 11mm " " 68-28-6-11-10-203 " 3.8g

267 ♂ *Antrozous minor* 110-45-12-26-24-349 " 16.2g

May 28 Same Location

268 ♀ 1 Emb 9mm *Myotis californicus* 79-37-7-13-12-229<sup>ex</sup> wt 2.8g

May 29 Same Location

269 ♀ *Pipistrellus hesperus* 70-31-6-12-10-205<sup>ex</sup> wt 3.5g

270 ♀ *Myotis californicus* 80-41-7-13-11-230 wt 3.5g

271 ♂ *Antrozous minor* 107-47-12-27-24-360 wt 15.8g

May 30 El Chorro # 800<sup>+</sup> ft, 2 mi W. Agua Caliente, <sup>Cape District</sup> Baja California

272 ♀ 2 Emb, 6mm *Dasypus equ* 121-53-9-16-12-355<sup>ex</sup> wt 11.7g

273 ♀ 2 Emb. 8mm " " 119-54-9-16-10-345 " 12.8g

274 *Vta thalassina*

275 " "

276 " "

277 *Cnemidophorus*

278 ♀ 3 Emb, 13mm *Citellus leucurus* 224-79-38-12-6<sup>ex</sup> wt 102.3g







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May 31 El Chono, 800<sup>+</sup> ft, 2 mi W Agua Caliente, Cape District, Baja California

- 279 ♀ — *Dasypsterus ega* 118-55-10-19-9-370<sup>ex</sup> wt. 12.0g  
280 ♀ 2 Emb 8 mm " " 114-54-9-18-10- — " 12.9  
281 ♀ 2 Emb 8 mm " " 122-55-10-18-11-366 " 13.3  
282 ♀ 2 Emb 8 mm " " 119-51-10-17-12-362 " 14.2  
283 ♂ *Tadarida ferox* 113-46-10-21-17-345 " 10.2  
284 ♀ — " " 101-37-9-21-15-320 " 10.0  
285 ♀ 1 Emb 13 mm " " 100-42-9-20-17-325 " 10.8  
286 ♀ 1 Emb 17 mm " " 108-43-9-20-16-335 " 12.0  
287 ♂ *Tadarida mexicana* 89-33-10-18-14-295 " 6.5

June 1 Santa Anita, 250<sup>+</sup> ft, Cape District, Baja California

- 288 ♂ *Dasypsterus ega* 105-47-9-15-9-330<sup>ex</sup> wt 8.2g  
289 ♂ " " 115-46-10-16-9-345 " 11.4g  
290 ♂ " " 124-53-10-18-11-345 " 11.5g  
291 ♂ *Myotis velifer* 85-37-9-14-11-265 " 5.1g

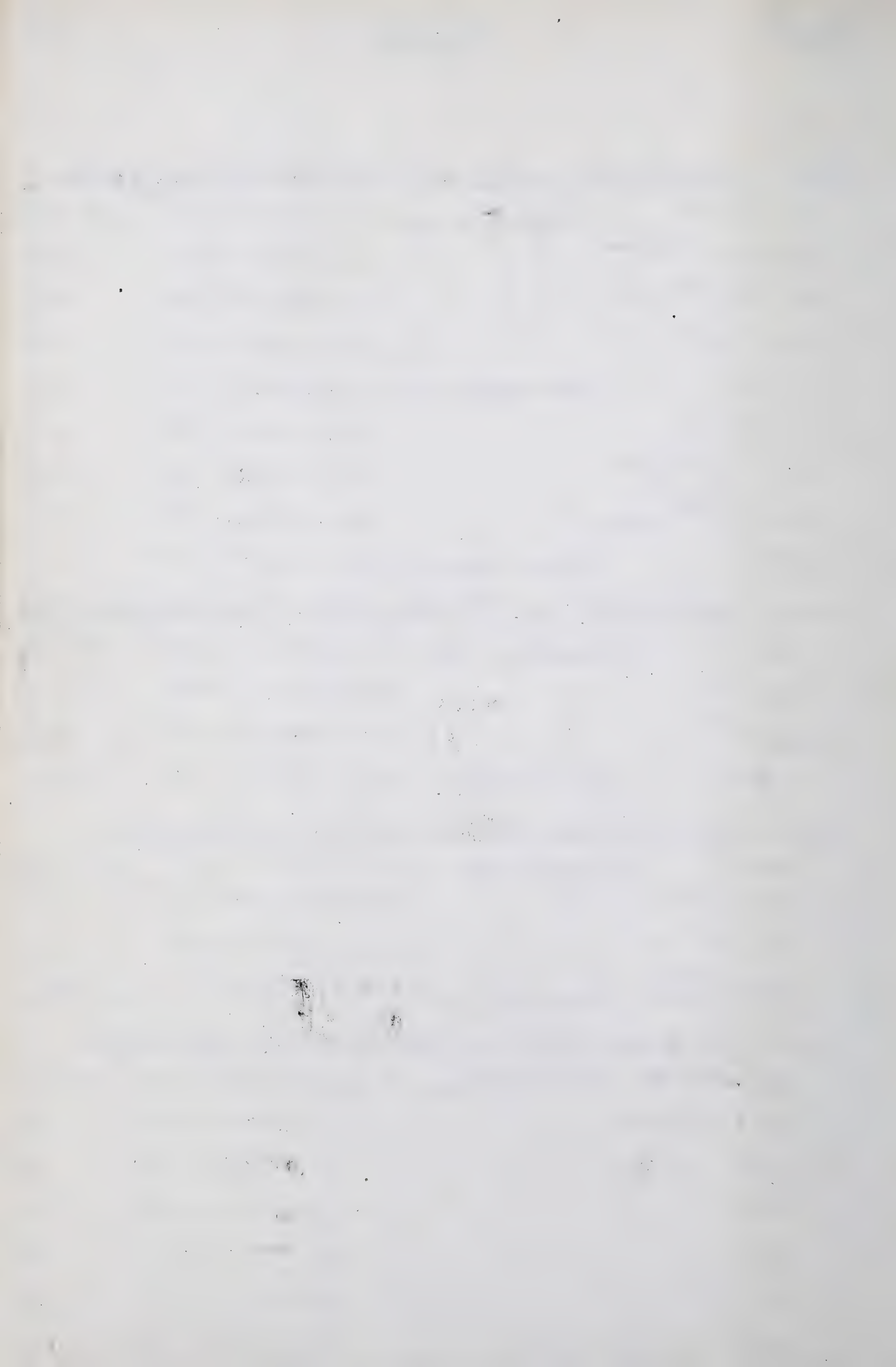
June 2 6 mi N. San Jose del Cabo, 250<sup>+</sup> ft, Baja California

- 292 ♂ *Dasypsterus ega* 116-51-9-14-9-340<sup>ex</sup> wt. 10.6g  
293 ♀ 2 Emb 4 mm " " 117-55-10-16-11-345 " 11.3g  
294 ♀ 2 Emb 3 mm " " 122-52-10-17-11-362 " 12.3g  
295 ♀ Lactating No Embs *Lepus californicus* 520-70-112-120<sup>m</sup>-147<sup>c</sup> wt. 1945g

June 2 Cerro Cirilo, 600<sup>+</sup> ft, 4 mi N. San Jose del Cabo, Baja California

- 296 ♀ 1 Emb 14 mm *Balantiopteryx plicata* 62-19-10-16-11-272<sup>ex</sup> wt 5.3g  
297 ♀ 1 Emb 14 mm " " 68-22-10-15-10-266 " 5.6g  
298 ♂ " " 62-16-9-15-11-245 " 4.0g  
299 ♂ " " 60-16-9-15-12-247 " 4.1g  
300 ♂ " " 63-19-9-14-11-254 " 4.2g  
301 ♂ " " 61-16-9-14-11-250 " 4.3g  
302 ♂ " " 62-17-9-14-11-250 " 4.3g







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June 2 Cerro Cirilado 600<sup>+</sup> ft, 4 mi N. San Jose del Cabo, Baja California

303 ♂ *Balantiopteryx plicata* 60-17-9-14-11-251<sup>m c 2x</sup> wt 4.4g

304 ♂ " " 61-17-9-14-10-242 " 4.4g

305 ♂ " " 64-18-9-14-11-254 " 4.5g

June 3 6 mi N. San Jose del Cabo, 250<sup>+</sup> ft, Baja California

306 ♂ *Perognathus spinatus* 183-105-24-10-7 wt. 19.3g

307 ♂ Testes 8 mm " " 191-105-24-10-8 " 19.6g

308 ♀ No Embs " " 175-100-21-8-7 " 12.7g

309 ♀ No Embs " " 188-102-24-10-7 " 18.9g

June 4 Same Location

310 ♀ No Embs *Neotoma lepida* 298-150-34-29-25<sup>m c</sup> wt. 119.0g

311 ♀ " " " " 250<sup>+</sup>-75<sup>+</sup>-37-33-26<sup>m c</sup> " 181.1g

June 5 9 mi SW San Jose del Cabo, 300<sup>+</sup> ft, Baja California

~~June 5~~ 312 ♂ *Balantiopteryx plicata* 63-18-9-15-12-255<sup>m c 2x</sup> wt 4.3g

June 5 1 mi N. Cabo San Lucas, 20<sup>+</sup> ft, Baja California

313 ♂ *Tadarida ferox* 107-43-10-22-17-340 wt. 9.2g

314 ♂ " " 100-41-10-21-15-335 " 10.3g

315 ♀ — " " 101-42-10-21-15-335 " 11.1g

June 7 Punta Gasparero, 10<sup>+</sup> ft, 23°16'N, 110°9'W, Baja California

316 ♂ — *Perognathus arenarius* 169-101-24-9-6<sup>m c</sup> wt 12.1g

317 ♂ Testes 7 mm " " 98<sup>+</sup>-26<sup>+</sup>-22-9-7 " 13.3

318 ♂ Testes 7 mm " " 175-100-24-10-6 " 13.9

319 ♂ Testes 8 mm " " 166-98-23-10-7 " 14.9

320 ♂ Testes 8 mm " " 172-101-23-9-6 " 15.5

321 ♀ No Embs " " 168-98-23-9-6 " 12.0

322 ♀ " " " " 159-92-22-8-6 " 12.0

323 ♀ " " " " 167-98-23-9-6 " 12.1

324 ♀ " " " " 177-102-24-9-7 " 13.5







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June 8 Punta Gasparino, 10<sup>+</sup> ft 23°16'N 110°9'W, Baja California

325	♂	<i>Perognathus arenarius</i>	155-90-22-9-6 <sup>c</sup>	wt 12.5g
326	♂	"	172-103-22-9-7	" 12.8
327	♂	"	161-87-22-9-7	" 13.8
328	♂	"	173-98-23-9-7	" 14.5
329	♂	"	173-99-24-9-7	" 15.0
330	♂	"	169-99-24-10-7	" 15.1
331	♂	"	170-100-24-9-7	" 16.0
332	♀ No Embs	"	170-103-23-9-6	" 11.1
333	♀ " "	"	174-102-24-9-7	" 11.2
334	♀ " "	"	168-100-24-9-6	" 11.3
335	♀ " "	"	162-98-22-9-6	" 12.2
336	♀ " "	"	166-96-23-9-7	" 12.3
337	♀ 4 Emb 4mm	"	177-98-24-10-7	" 16.6

June 9 San Juan de la Barranera, 1600 ft, W base Sierra Laguna, Baja California

338	♀ Lactating No Embs.	<i>Citellus leucurus</i>	205-60-37-12-7 <sup>c</sup>	wt 108.0g
339	♀ 2 Emb. 11mm	<i>Pipistrellus hesperus</i>	67-27-6-12-10-202 <sup>24</sup>	" 3.7g
340	♂	<i>Eptesicus fuscus</i>	103-43-10-16-13-301	" 9.1g
341	♂	"	106-42-10-16-13-312	" 9.6g

June 10 La Laguna, 6200<sup>+</sup> ft, Sierra de la Laguna, Baja California

342	♂	<i>Eptesicus fuscus</i>	95-42-10-16-12-295 <sup>24</sup>	wt —
June 11 343		<i>Uta stansburiana</i>		
344		"	"	
345		"	"	
346		"	"	

June 11 Same Location

347	♂	<i>Eptesicus fuscus</i>	99-41-10-17-13-304 <sup>24</sup>	wt —
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June 12 La Laguna, 6200<sup>+</sup> ft, Sierra de la Laguna, Baja California

348 ♂ *Peromyscus eremicus* 185-106-21-18<sup>m</sup>-15<sup>c</sup> wt —

349 ♂ " " 190-106-<sup>22</sup>19-19-16 " —

350 ♀ No Embs *Peromyscus truei* 202-114-23-24-20 " —  
351 ♀ " " " " 182-100-22-21-19 " —

352 ♀ — *Tadarida mexicana* 95-34-10-18<sup>m</sup>-14<sup>c</sup> —<sup>ex</sup> wt —

353 ♂ *Pipistrellus hesperus* 65-28-6-11-9-184 wt —

354 ♂ *Eptesicus fuscus* 84-34-10-18-13-290 wt —

355 ♂ " " 104-44-10-17-13-293 wt —

June 13 Same Location

356 ♂ *Peromyscus truei* [Skull Only]

June 13 Todos Santos, 50<sup>+</sup> ft, Baja California

357 ♀ — *Tadarida mexicana* 94-35-9-18<sup>m</sup>-12<sup>c</sup>-295<sup>ex</sup> wt 8.2g

358 ♀ No Embs. " " 90-35-10-18-13-300 " 7.8g

June 14 Mina Palmar del Medio, 400<sup>+</sup> ft 4mi SSE Pescadero, Baja California

359 ♂ *Macrotus californicus* 88-35-12-32<sup>m</sup>-27<sup>c</sup>-317<sup>ex</sup> wt 10.5g

360 ♂ " " 85-33-13-33-28-325 " 10.6g

361 ♂ " " 91-36-13-32-26-320 " 11.8g

362 ♂ " " 90-34-14-33-27-323 " 12.1g

June 17 Wend Llano de Hircy, 50<sup>+</sup> ft, Baja California

363 ♂ *Perognathus baileyi* 185-105-26-9<sup>m</sup>-6<sup>c</sup> wt. 19.2g

364 ♂ " " 190-108-25-9-8 " 20.7g

365 ♂ " " 197-108-25-9-8 " 22.1g

366 ♂ " " 200-105-25-9-7 " 23.1g

367 ♂ " " 104<sup>+</sup>-40<sup>+</sup>-25-10-7 " 28.6g

368 ♀ No Embs. " " 186-103-26-10-8 " 23.3g

369 ♀ 2 Embs 7mm " " 181-95-25-10-7 " 25.2g

370 ♂ *Dipodomys merriami* 234-140-37-14-11 " 41.4g







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June 17 Pozo Grande, 25°46'N, 112°02'W, Baja California

371	♂	<i>Eptesicus fuscus</i>	96-40-8-15-11-291 <sup>m c ex</sup>	wt 7.2g
372	♂	"	97-43-10-15-12-290	" 7.2g
373	♂	"	105-44-9-17-12-306	" 7.4g
374	♀ No Embs	"	94-37-10-16-12-300	" 8.0g

June 18 San Jorge, 5<sup>+</sup> ft, 25°44'N, 112°07'W, Baja California

375	♀ No Embs	"	105-47-10-17-12-295	" 8.1g
376	-	<i>Lynx rufus</i>		

June 19 Same Location

-skulls only-	377	♂	<i>Perognathus arenarius</i>	
	<del>378</del>	<del>♂</del>	"	Discarded
	379	♂	"	
	380	♂	"	
	381	♂	"	
	382	♂	"	
	<del>383</del>	<del>♂</del>	"	Discarded
	384	♀	"	
	<del>385</del>	<del>♀</del>	<i>Perognathus barthi</i>	Discarded
	386	♀	<i>Perognathus arenarius</i>	
387	♀	"		
388	♂	<i>Dipodomys merriami</i>	237-142-37-14-11 <sup>m c</sup>	wt 32.9g
389	♂	"	247-144-37-14-11	" 38.0g
390	♂	<i>Perognathus arenarius</i>	90 <sup>+</sup> -27 <sup>+</sup> -21-7-6 <sup>c</sup>	wt 8.6g
391	♂	"	147-81-20-7-5	" 8.9g
392	♂	"	150-80-21-7-5	" 9.1g
393	♀ No Embs	"	135-75-20-7-5	" 7.6g
394	♀	"	144-82-20-7-5	" 8.4g
395	♀	"	151-83-21-7-5	" 9.2g
396	♀	"	147-80-21-7-5	" 9.3g







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June 19 San Jorge, 5<sup>±</sup> ft, 25°44'N, 112°07'W, Baja California

397 ♀ No Embs *Perognathus arenarius* 152-92-21-7-5<sup>c</sup> wt 10.0g

398 ♂ *Perognathus baylei* 194-109-25-10-7 wt 21.0g

399 ♂ *Perognathus arenarius* 138-78-20-7-5<sup>c</sup> wt 9.1g

400 ♂ " " 147-80-20-7-5 " 9.4g

401 ♂ " " 145-83-20-7-5 " 10.3g

402 ♂ " " 148-86-21-7-5 " 10.9g

403 ♀ " " 130-74-20-7-5 " 7.3g

404 ♀ " " 137-74-21-7-5 " 8.9g

405 ♀ " " 146-86-21-7-5 " 9.2g

Formalin

June 20 Same Location

406 ♀ No Embs *Dipodomys merriami* 239-150-37-15-11<sup>c</sup> wt 31.9g

407 ♂ *Peromyscus maniculatus* 164-54-23-21-17 " 25.6g

408 ♀ No Embs *Perognathus baylei* 183-100-25-10-8 " 18.9g

409 ♂ *Perognathus arenarius* 144-82-21-7-5 " 8.3g

410 ♂ " " 148-81-21-7-5 " 9.3g

411 ♂ " " 161-91-21-7-5 " 10.0g

412 ♂ " " 147-83-21-7-5 " 10.1g

413 ♀ No Embs " " 117<sup>+</sup>-55<sup>+</sup>-21-7-5 " 8.0g

414 ♀ " " " " 137-80-20-7-5 " 8.2g

415 ♀ " " " " 149-82-21-7-5 " 9.1g

416 ♀ " " " " 142-81-20-8-5 " 9.7g

Skeletons only

June 21 Same Location

417 ♂ *Peromyscus maniculatus* 166-76-22-19-14 wt 25.3g

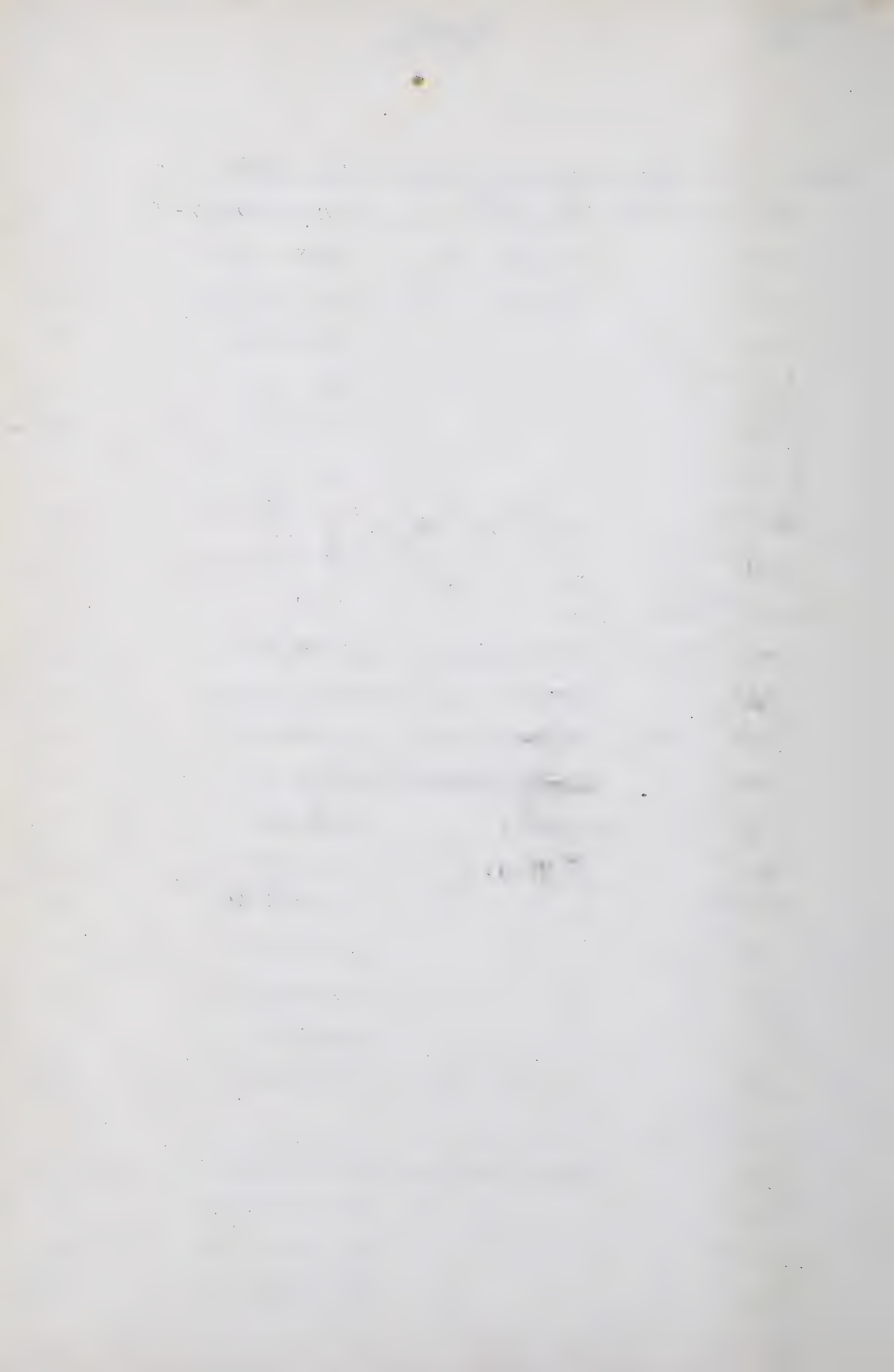
418 ♂ " " 170-76-24-19-18 " 22.4g

419 ♂ " " 179-75-22-19-17 " 33.8g

420 ♂ " " 166-73-22-20-17 " 24.0g

421 ♂ " " 167-74-22-18-16 " 25.3g

Skull Only  
Caught by S.B. Benson





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June 21 San Jorge, 5<sup>±</sup> ft, 25°44'N, 112°07'W, Baja California

Caught by S.B. Benson Skulls only	422 ♀	<i>Peromyscus maniculatus</i>	175-77-23-20-17	wt 26.8g
	423 ♂	"	"	" 31.1g
	424 ♂	"	"	" 31.5g
	425 ♀	"	"	" 20.4g
	426 ♀	"	"	" 23.6g
	427 ♀	"	"	" 27.3g
	428 ♀	"	"	" 29.4g

June 22 8.3 mi by road N. Camisoli, 26°32'N, 111°37'W, Baja California429 ♀ 1 Emb 26mm *Macrotus californicus* 94-39-13-32-28-330<sup>ev</sup> wt 12.9gJune 22 Santa Rosalillito, 25<sup>±</sup> ft, S.E. end Bahia de Concepcion, Baja California430 ♀ Lactating No Embs *Antrozous minor* 111-48-13-28-26-363<sup>ev</sup> wt 15.0g

431 ♀ Lactating No Embs " " 110-48-12-31-27-351 " 14.2g

432 ♀ Lactating No Embs " " 111-46-12-30-26-353 " 16.0g

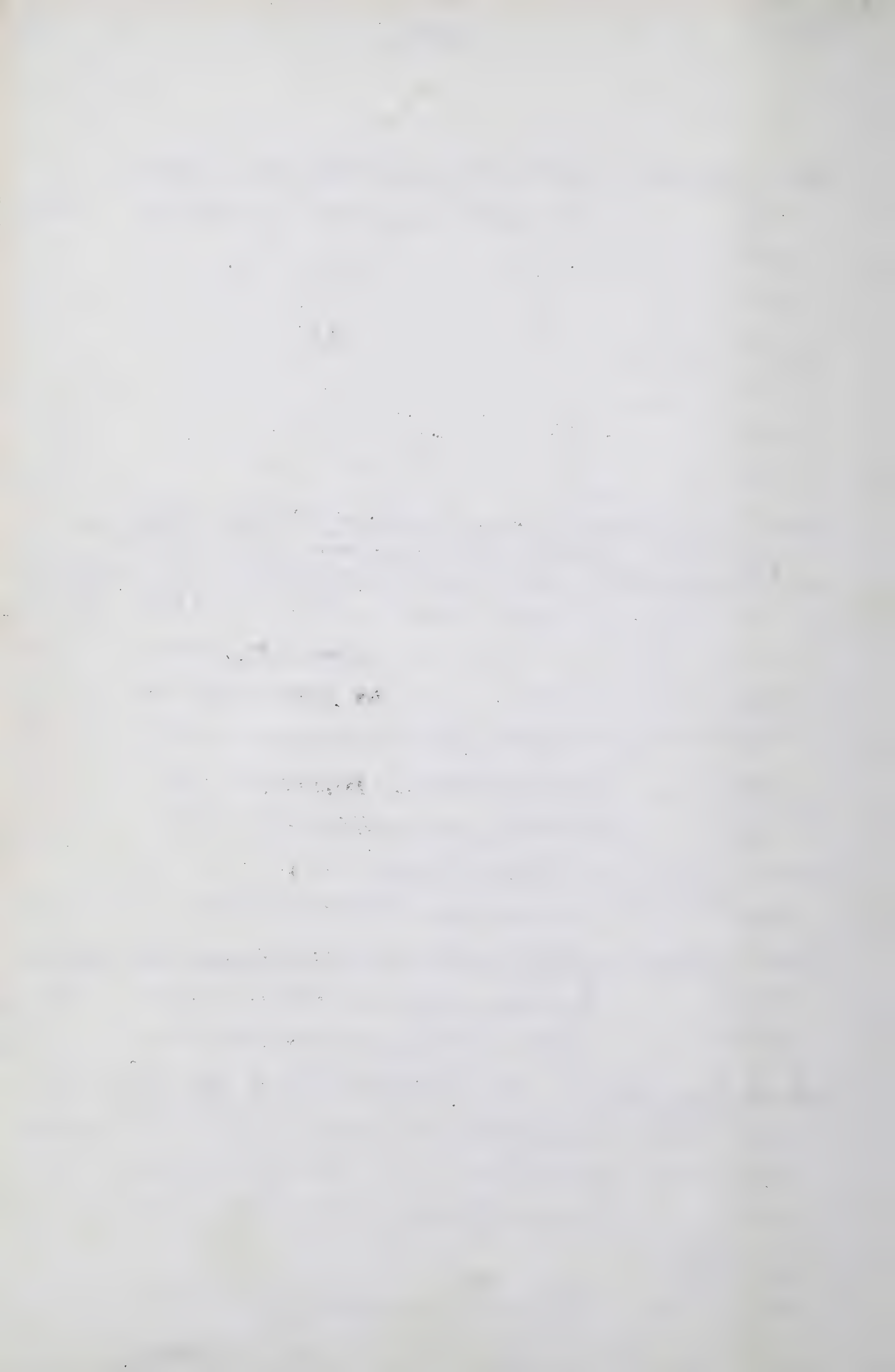
433 ♀ No Embs *Eptesicus fuscus* 96-43-9-16-13-288 " 7.4g434 ♂ *Myotis californicus* 75-37-7-13-11-218 " 2.6g

June 23 Same location

435 ♂ *Dipodomys merriami* 241-149-40-15-12<sup>c</sup> " 40.0gJune 23 Mulege, 25<sup>±</sup> ft, Baja California436 ♀ 2 Emb 19mm *Eptesicus fuscus* 106-44-10-18-14-300<sup>ev</sup> wt 12.0gJune 25 Los Martires, 300<sup>±</sup> ft, 23 mi by road N.W. San Ignacio, Baja California437 ♂ *Eptesicus fuscus* 102-44-10-15-12-308 wt 9.3g438 ♂ *Myotis californicus* 80-39-7-13-12-212 " 2.9gJune 26 Arroyo San Luis, 800<sup>±</sup> ft 9 mi W. Calmalli, Baja California439 ♀ Lactating No Embs *Choeronycteris mexicana* 77-5-12-16-12-334<sup>ev</sup> wt 16.6g440 ♀ No Embs *Corynorhinus* 95-47-9-35-31-270 " 6.0g441 ♂ *Myotis californicus* 84-40-7-13-12-220 " 3.6g

June 27 Same location

442 ♀ 1 Emb 30mm *Choeronycteris mexicana* 81-8-12-17-12-345<sup>ev</sup> wt 24.2g





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June 29 Santa Rosalia, 10<sup>±</sup> ft, Baja California

443 ♂ *Pipistrellus hesperus* 72-29-6-13-10-207<sup>ex</sup> wt —

June 30 San Luciano, 100<sup>±</sup> ft, 5 mi S Santa Rosalia, Baja California

444 ♀ No Embs *Eptesicus fuscus* 106-45-10-17-13-297<sup>ex</sup> wt —

445 ♀ 2 Emb 15 mm " " 102-42-10-17-12-285 " "

446 ♀ 1 Emb 12 mm " " 101-42-10-17-12-283 " "

June 30 Mina La Zonta, 100<sup>±</sup> ft, 2 mi W. Santa Rosalia, Baja California

447 ♂ *Leptonycteris* 69-0-14-16-12-380<sup>ex</sup> wt —

448 ♂ " 71-0-14-16-11-385 " "

449 ♀ " 67-0-14-16-11-383 " "

450 ♀ " 74-0-15-18-12-392 " "

July 11 24 mi NW. Punta Prieta, 2000<sup>±</sup> ft, Baja California

451 ♂ *Tadarida ferox* 108-40-13-25-18-350<sup>ex</sup> wt 13.4g

July 12 Lam Location

452 ♂ *Peromyscus eremicus* 190-108-20-21-17<sup>c</sup> wt 17.4g

July 12 Catawiña, 1850<sup>±</sup> ft, Baja California

453 ♀ *Myotis californicus* 79-40-7-13-12-219<sup>ex</sup> wt 3.4g

454 ♂ *Pipistrellus hesperus* 63-27-6-11-9-190 " 2.0g

455 ♀ " " 71-30-6-13-9-212 " 2.8g

456 ♀ " " 76-30-6-13-10-215 " 3.8g

457 ♀ " " 73-30-6-12-9-209 " 4.3g

July 14

458 ♀ No Embs *Choronyx mexicanus* 77-10-12-16-12-351<sup>ex</sup> wt 16.2g

July 15 8 mi N. Rosario, Baja California

459 ♂ *Perognathus fallax* 180-106-25-10-8<sup>c</sup> wt 16.0g

460 ♀ Im No Embs *Peromyscus eremicus* 163-95-21-19-16 " 12.8g

461 ♂ *Peromyscus maniculatus* 161-78-21-21-18 " 21.1

462 ♂ " " 163-79-21-19-17 " 18.2g











Journal





Wast, 1948

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## Journal

April 7<sup>8</sup> E side Cocopah mts, 21 mi SSE Mexicali, Baja California

9:05 A.M. Camped  $\frac{1}{2}$  mile west of Mexicali - San Felipe road on alluvial fan of sand and rock on east side of Cocopah mountains. The wash has several species of low cactus growing among ironwood, ocotillo and creosote. No grass dry or fresh is visible in the wash and dry grass found but rarely in the dry surrounding hills.

Minimum temperature last night was  $48\frac{1}{2}^{\circ}\text{F}$ , temperature at 7:00 A.M.,  $56^{\circ}\text{F}$ . A strong wind blew all day yesterday and up till about 2:00 A.M. The sky was clear yesterday and is clear this morning, a breeze is coming up at this time of writing.

Of ~~100~~<sup>50</sup> traps placed in center of wash (alluvial fan) five were sprung and only two contained specimens, both of which were Dipodomys merriami. Tavis, Murray, and Dr. Benson caught Perognathus spinatus + baileyi, Peromyscus eremicus + erinitus, but no Dipodomys merriami.

April 8 Punta San Felipe, 50 $\pm$  ft, Baja California.

9:15 P.M. Arrived this camp about 5 P.M. yesterday. We are located about 2 mi east of the town of San Felipe about 200 yards from the beach. We are about a mile from the end of the point which lies NEE of us beneath a rocky hill in a group of hills some of which are an estimated five or six hundred feet high. The nearest





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April 8 Punta San Felipe, 50 $\pm$  ft, Baja California

fresh water is at the town of San Felipe.

The drive here from our camp on the Cocopah mts. varied greatly in road quality. A new road is being built from Mexicali to San Felipe. At our time of travelling the fills were completed with surfacing and bridge building yet to be done up to a distance of 20 miles south of El Mayor. At a point where the playa meets some black slate hills sand dunes blocked our progress and we had to drive via car "trails" over the playa for all but the last of the trip. The low International truck had a little difficulty navigating over the high centers but otherwise the drive was not difficult. Because of the mud surface of the network of playa roads it would be suicide to venture on to them after wet weather. Our sole points of reference while driving over the playa were the completely arid rocky hills to our right and the beginnings of a telephone line running to San Felipe over the playa. The only signs of life on the playa were dog or coyote tracks and beer and tequila bottles spaced at about fifty foot intervals where they had been thrown out of vehicles by thirsty travellers. Creosote and ocotillo were visible growing on the





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April 8 Punta San Felipe, 50 $\pm$  ft, Baja California  
alluvial fans between the playa and the rock hills. Approximately 20 miles north of here the road left the playa and led through the alluvial fans for the rest of the journey. Here we were surrounded by the desert association of Palo Verde, Ocotillo, Creosote bush, some type of Copal trees, small Cardons, and small desert bushes. Five Citellus tereticaudus were seen, four or five whip-tailed lizards and one red-tailed hawk with what looked like a snake in its beak. We were supplied with road signs about every ten miles for the last thirty miles of our trip. Two passenger cars and four trucks were passed after we entered the playa.

San Felipe is a town of about 100 houses arranged in a rectangle around a dusty area in the center about 100 yds square. A dozen fishing boats (small) were anchored in the harbor facing the south side of the town. We met two American sportsmen in a coupe there who had been disappointed in game fishing. Some potatoes and Mexican sausage were purchased to augment our provisions.

Our camp includes a neat shack that we appropriated after being told by a few of the inhabitants that no one had lived here for





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April 8 Punta San Felipe, 50<sup>±</sup> ft, Baja California  
years. Today we were told that the house  
belongs to the assistant chief of police at  
Mexicali.

Minimum temperature last night was 57°F,  
maximum today was 76° in the shade. Yesterday  
and today were beautiful days with little wind  
and cloudless skies.

~~700~~<sup>50</sup> live traps set entirely in rocks and talus  
above camp caught two Perognathus spinatus,  
four Peromyscus crinitus and one Peromyscus  
eremicus. The traps were baited with rolled  
oats and bird seed - the latter seeming to  
be preferred by one Perognathus penicillatus that  
we have been observing in camp.

Tonight fifty live traps were set in the  
talus slopes and ten Schuyler traps among  
the rocks on top of the hill above camp. The  
live traps again baited with rolled oats and  
bird seed, the Schuylers with dried apricots.

Murray caught a Crotalus cerastes this  
afternoon in the talus accumulation and  
a Cnemidophorus in a sandy wash. Tevis  
also caught a Uta and a Callisaurus.

Dr. Benson shot a Pipistrellus hesperus  
flying about camp this evening.

An American Raven flew over camp this  
evening.





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April 10 Punta San Felipe, 50<sup>±</sup> ft, Baja California

Minimum temperature reading morning of April 9 was 66° F, maximum yesterday was 82½° F in the shade.

Live traps yesterday caught 1 Perognathus spinatus, 3 Perognathus formosus, 5 Peromyscus crinitus.

Yesterday a clear warm day with a cool breeze from the east.

Shot a Pipistrellus hesperus at dusk flying over the beach with 3 or 4 others of the same species.

While we were skinning last night in one room of the cabin 2 Tadorna mexicana flew into the room (10:30 P.M. + 11:00 P.M.) and were secured by Dr. Benson.

Dr. Benson killed two Crotalis cerastes in a sand gully where he was setting traps for Coyotes; Rattlesnakes were killed about midnight last night.

7:40 P.M. Minimum temperature last night was 68½° F, Maximum today was 80½° F at 1:00 P.M. although the temperature has risen to 80½° at the time of writing after dropping to 80° this afternoon.

Ten Schuyler traps set last night in





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April 10 Punta San Felipe, 50<sup>±</sup> ft, Baja California  
rocks on hill in back of camp caught  
1 ♀ Neotoma lepida. The Neotoma was caught  
at the top of the hill in the solid rocks above  
the talus slope.

Ten Museum specials had 3 Perognathus  
formosus in them by 9:00 P.M. last night.  
They were taken out and the traps reset  
in the same positions to yield 2 Peromyscus  
crinitus, 1 Dipodomys merriami, and 1  
Perognathus spinatus this morning.

Fifty live traps set on hill east of  
camp in rises between gulches yielded  
5 Perognathus formosus (#20-24 incl), 10  
Perognathus spinatus (#25-34 incl), and  
two Peromyscus crinitus (#35, 36).

To date none of the specimens caught  
have had embryos.

At noon tried my first octopus  
(called "Pul-po"). Dr. Benson boiled it  
first, but finally decided to cook it  
in the pressure-cooker because of its  
toughness and the tenacity with which  
the skin clung to the meat. What finally  
emerged smelled like clams, looked like  
dirty parsnips, and chewed like vul-  
canized rubber. Tevis claimed it had  
a subtle flavor, but I didn't go that far.





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April 10 Punta San Felipe, 50± ft, Baja California

Shot another Pipistrellus hesperus at dusk. It was flying above the high part of the beach where the sand meets the cliffs of permanently dry land.

Bats first appeared at approx. 5:00 P.M. flying in a westwardly direction along the beach perhaps from the small sea-caves and crevices of the rocky mountain east of us. At most five bats were seen at once in one general area, usually they flew in twos and threes. All looked like Pipistrellus hesperus.

The day was warm and sunny with a breeze from the south-east coming up about 4:00 P.M.

Dr. Benson lost a coyote and the accompanying steel trap last night. He shot an American Raven out of 4 or 5 Buzzards and 2 American Ravens, all in a group, gathered around a Coyote carcass. The Raven had a mottled appearance which Dr. Benson thought might be due to malnutrition.

April 11 7:00 A.M. Saw a coyote this morning at 6:30 A.M. 100 yds west of camp, also saw a probable Pipistrellus hesperus flying east over camp about 6:00 A.M.

Saw the prehistoric fish weir off the





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8

April 11 Punta San Felipe,  $50 \pm$  ft, Baja California  
beach at the end of the road - the beach  
just east of us at the foot of a large  
rocky hill. There is little remaining, only  
a few piles of rock about two ft. high  
and one ft. deep and 50 ft long. The  
fish weir is mentioned in Nelson, "Lower Calif.  
& its Natural Resources."

8:05 P.M. Minimum temperature last night was  
 $68^{\circ}\text{F}$ , maximum this afternoon was  $75^{\circ}\text{F}$ . It  
was cloudy and cool this morning, clearing  
up and getting warm in the afternoon. A good  
breeze arose about fifteen minutes ago.

Took a walk around the point with Vera  
and Murray at 11:00 A.M. and got back at  
2:00 P.M. Our route covered the rocky hills and  
desert sand in back of our camp. Saw a  
Red-tailed hawk and a Jack Rabbit and  
shot 3 Callisaurus draconoides and 2 Dipsosaurus  
dorsalis (#39-43 incl). The Callisaurus have  
an interesting habit of running from you only  
up to the edge of a bush and then waiting to  
see if you make another movement after them. It  
is quite easy to get close to them if you move  
slowly. The Dipsosaurus seem more prone to  
run around a bush and stop on the other side  
out of sight.

Went bat shooting at 7:00 P.M. Tonight with





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April 11 Punta San Felipe, 50<sup>±</sup> ft, Baja California  
Murray and Tewis and saw many bats flying along the beach and circling about the hill above camp. They looked like two species; and were probably Pipistrellus hesperus and Tadarida mexicana. Murray shot one Tadarida mexicana. The Pipistrellus seem to be associated in loose groups of 4 or 5, while the much bigger Tadarida flew singly.

Tewis located a well about 500 yds from the beach in the gully S.W. (San Felipe side) of camp. The mouth of the well has caved in so that it is about 20 ft in diameter and there is only what looks like two inches of brackish water in the bottom.

9:15 P.M. A strong gale has come up from the north and the air is full of dust.

This evening while we were shooting bats at the beach we noticed a large school of fish breaking water in the shallow off-shore water. The fish jumped and made the water boil about 50 yds from the beach for about an hour. Dr. Benson tried to get some of them by plug casting, but was unsuccessful. The fish appeared to be three or four feet long.

We plan to change the location of our camp tomorrow to some other place in this area, the location depending upon the road.



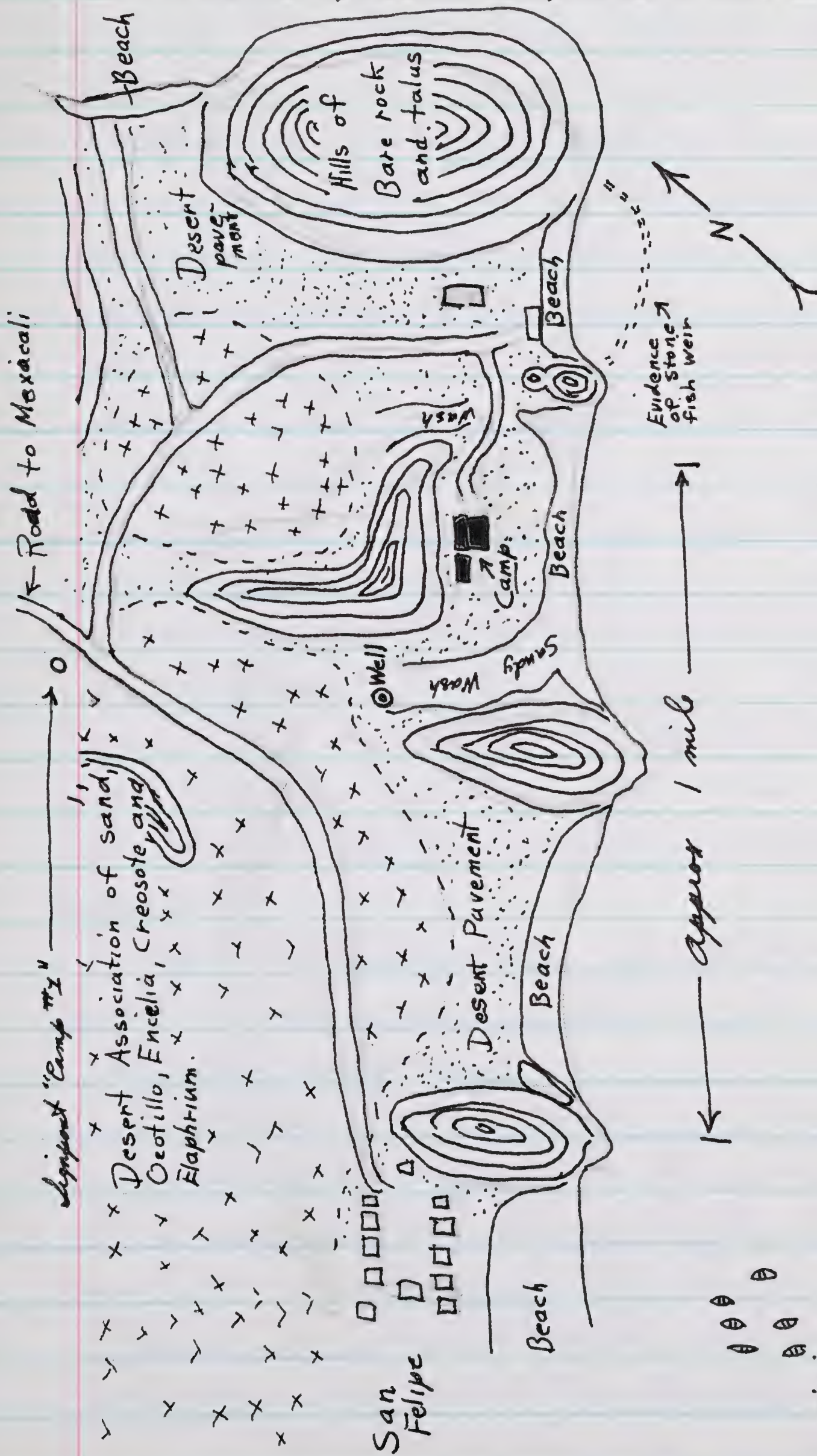


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# Journal

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April 11 Punta San Felipe, 50<sup>±</sup> ft, Baja California







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# Journal

11

April 12 9 mi W. Punta San Felipe, 200± ft, Baja California

6:35 P.M. Departed San Felipe 12:30 and arrived this place about 1:30. We are 9.3 miles west of San Felipe by road and are camped on a large flat wash about 200 yds from the Sierra San Felipe. The wash is composed of coarse white sand and decomposing granite rock. Growing in the wash are tall Ocotillo, mesquite, Elaphium, cardone, <sup>ironwood</sup> and Palo Verde.

The hills have ocotillo at low levels and an occasional barrel cactus. The rock is mostly granite and weathers in a spherical fashion instead of the shale-like fractures of the lava at Punta San Felipe. The rocks and talus are noticeable lighter than those of Punta San Felipe and the slopes contain much more gravel than those around the former camp.

Saw a Dipsosaurus, a Calisaurus, and shot a Cnemidophorus between two and four this afternoon.

Shot a Black-throated grey warbler from the top of an Ocotillo this afternoon. Dr Benson shot one Plumbeous Gnatcatcher and saw a Citellus tereticaudus and several Citellus leucurus. He also found an old weathered horn of a Mountain sheep.

I set out 50 live traps on the hill-





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April 12 9 mi W. Punta San Felipe, 200<sup>±</sup> ft, Baja California  
sides this afternoon varying in distance  
from 20 ft to 100 ft from the wash below.

There are many Neotoma signs in small  
hollows in the foothills and many Lepus  
signs in this wash. Dr. Benson stated  
that he saw probable Kit-fox and Coyote  
tracks in one of the canyon washes. A  
large burrow that I saw and described  
to him was said to be a possible Badger.

Saw about five ash-throated fly-  
catchers perched in an ironwood and could  
hear three of them from a distance of 100 yds.  
Costa hummingbirds are common around  
camp, one even coming up and inspecting  
a red shovel handle.

Probable Dipodomys burrows in the  
wash, some of which have a crater built  
up around them of something which looks  
like old dandelion seed.

We are about 5 mi. north of the type  
locality of Perognathus formosus.

April 13 [Written at El Mayor, 30 ft, Rio Hardy, Baja  
Calif.] The fifty live traps set in the decomposed  
granite foothills caught but one Perognathus  
spiniatus, one ♂ Perognathus formosus, and one ♀  
Peromyscus crinitus (#44-46 incl.).

Minimum temp. last night was 58°F





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# Journal

13

April 13 El Mayor, 30 ft, Rio Hardy, Baja California

8:45 P.M. Arrived here approx. 6:30 P.M. after the drive from San Felipe, leaving there at 12:30 P.M. The drive was over approximately the same terrain as described for April 8, except that we drove on a different road across the playa about 30 mi north of San Felipe for a short stretch - closer to the mountains, thereby avoiding the high centers in the roads traveled on the 8<sup>th</sup>. We were delayed about an hour 10 miles south of El Mayor where they were putting in a large corrugated iron culvert. About 10 men were putting in the culvert by hand and had difficulty in lining it up and getting the sections to interlock properly.

The mountains above the playa described on the 8<sup>th</sup> are absolutely arid and of colors ranging from red to jet black. Innumerable pockets dot their surface and sections of them look like cooled globes of slag. The new highway to San Felipe will run tangent to them and through some of the jet black ones. In some places the wind-blown sand gathers in the crests and hollows in exactly the way as snow.

From the way the new roadway looks it will be a very ample 2 lane highway.





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April 13 El Mayor, 30 ft, Rio Hardy, Baja California

We are camped about  $\frac{1}{2}$  mile above <sup>(north of)</sup> a well with a pump and about  $\frac{1}{4}$  mile north of a point where the Rio Hardy meets the highway. We are 75 yards east of the highway and camped in river bottom material.

The river Hardy is an old river, judging from the way it meanders in the flood plain. Stretches of the flood plain east of us are green and appear very fertile. Tules grow along the banks and fish may be seen jumping or stirring its surface. A Mexican told us that the fish in the river were Mullet and Catfish.

Insects abound here, judging from the numbers gathered around our gasoline lanterns. Included are mosquitoes and gnats in hordes.

Three distinct sizes of bats were seen flying overhead just before dark, the smallest one probably being a Pipistrellus.

The mountains on the west of us are tilted shale and volcanic rock with large veins of white quartz. Very little is growing on them except an Eucalia-like plant widely spaced. The washes are full of creosote and ironwood and are broken by the fingers of alluvial fans that rise high above the wash areas.





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April 13 El Mayor, 30 ft, Rio Hardy, Baja California

It is now 9:25 P.M. and the mosquitoes and gnats have disappeared. arising from the river bottom are all kinds of noises; one a loud bezyzy of about  $2\frac{1}{2}$  seconds given at one second intervals, and many others.

We are leaving for Mexicali tomorrow.

Seen on the trip today were several Round-tailed ground squirrels, an Antelope Ground Squirrel, and a White Ibis. Egre.

April 15 Cerro De Centinela 300 ft 13 m WSW Mexicali  
Baja California

7:30 A.M. Camped in an open wash near an ironwood tree 200 yds from the mountains on the north side of the road. The mountains are bare and rocky except for a few small bushes growing on its sides in the water-courses.

Minimum temp last night was  $78^{\circ}\text{F}$ .

9:00 P.M. Maximum temperature during the day was  $100^{\circ}\text{F}$  - taken by Maximum-Minimum thermometer in shade under one of the trucks.

50 live traps set <sup>yesterday evening</sup> in small meandering wash on alluvial slope 300-100 approx. yards from bare mountain slope caught 4 Perognathus spinatus, 2 Perognathus formosus and 2 Peromyscus crinitus. The specimens





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April 15 Cerro La Centinela 300 ft 13 mi WSW Mexicali,  
Baja California.

were put up by Town + Murry and are listed in their catalogs under this date. The bait for the live traps was ground corn, the only one available at the time. Traps set tonight also use ground corn for bait.

In the two nights we have been here, we have seen no bats flying at dusk, but five nighthawks were seen last night at dusk. Flies are very numerous in the daytime, but so far have seen no mosquitoes at this location. Bats may be heard "chip"ing overhead at the time of evening. The nearest water is an irrigation ditch approx 5 miles down the road (east) of here.

Dipodomys merriami are common in the washes low on the slope which contain sand, but their place is taken by the Perognathus on the slopes of more gradient and gravel. Perognathus (presumably) mounds + holes may be seen around Yucca and Creosote bushes.

The hill north of us is about 800 ft above us and of a mixture of dark volcanic rocks and granite with heavy quartz veining on its face. Again, it is completely





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April 15 Cerro De Centinela, 300 ft, 13 mi WSW Mexicali;  
Baja California  
arid.

I was very surprised at San Felipe to find dried specimens of the mushroom *Coprinus comatus* along the roadside. Tevis said he found one at El Mayor and Dr. Benson brought in a mushroom of the puffball type, but with a stem elevating the head about  $1\frac{1}{2}$  in above the ground. The cap was full of brown spores.

Laguna Salada may be seen to the S.W. at the pass 1 mi west of our camp.

Murray stated that he has seen only Uta and Calisaurus at this location.

Dr. Benson killed a shrike at sundown this evening.

Our camp is located <sup>in</sup> by a sandy wash by an ironwood tree and surrounded by alluvial material on which is growing ironwood, Ocotillo, *Eucelia*, Cholla cactus, and Creosote bushes, with occasional dry tufts of grass in the sand proper.

April 17 Cerro Prieto, 30 ft, 20 mi SSE Mexicali, Baja Calif.

We are camped approx. 500 yds N.E. Cerro Prieto proper next to a large irrigation canal running generally north. We are surrounded by large mesquite trees.





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April 17 Cerro Prieto 30 ft 20 mi SSE Mexicali, Baja Calif.

Minimum temp. the night of the 15<sup>th</sup> at Cerro de Centinela was 76°F, maximum during the day of the 16<sup>th</sup> was 100°F.

Minimum at this camp last night was 63°F and the temperature at time of writing 8:00 A.M. is 71°F.

9:30 A.M. Have moved camp from location beside irrigation <sup>ditch</sup> to base of Cerro Prieto on N.E. side. The reason for moving was to be closer to the rocks of the mountain and farther from the pigs, goats, cows, and Mexican dogs of a farmhouse (Agua Caliente on map).

The trip from Cerro de Centinela camp to here yesterday was hot, dusty, and dry. We left the former camp at about 2 P.M. when the thermometer was registering 100°F and drove into Mexicali to see about our game permits, have a flat tire fixed on the Dodge, and buy provisions. As soon as we hit the irrigated area west of Mexicali, the air became very humid and the smell of alfalfa came to us. Bird life increased tremendously; doves, shrikes, burrowing owls, white egrets and herons becoming plentiful. The irrigation ditches are lined with bamboo thickets affording good cover for many bird species. Meadow larks were abundant.





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April 17 Cerro Prieto 30 ft 20 mi SSE Mexicali Baja Calif.

Just before camping last night, Dr. Benson saw a Ondatra gibethica swimming in an irrigation ditch (about 5:30 PM). Others were seen and presumably heard gnawing during the night along the irrigation ditch.

Dr. Benson caught a Macropterus californicus in an abandoned bamboo shack 50 yds from the canal and in a mesquite thicket about 10:30 last night. It was caught by a hand net while flying about within the shack. It was obviously very confused by the flashlight for it merely flew around the walls of the shack for five minutes while Dr. Benson tried to net it, not finding the many large ~~at~~ holes the size of ~~at~~ a man's head or larger that would easily have permitted its escape.

Five nighthawks seen flying from mountainside yesterday at early dusk (sunset).

Smelled a skunk while driving along a bamboo + Tamarisk thicket beside canal yesterday about 5:30 PM.

A large saline pond was seen to contain about 100 Avocets late yesterday afternoon. The pond is located N.E. of the mountain and is about 300 yds long and 100 yds wide, appearing about 1 in to 2 ft in depth range.





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April 17 Cerro Prieto 30 ft 20 mi SSE Mexicali, Baja Calif.

9:15 P.M. Maximum temperature today about 1:00 P.M. was 100° F. A breeze blew all afternoon blowing quite hard around 5:00 P.M.

Cerro Prieto is a volcanic cone built up of large pieces of dark volcanic rock. At the top is a cone elliptical in shape of about 150 x 200 yds. The rim is from 50 to 200 ft above the cracked mud floor of the cone and very irregular in outline. It is about 200 ft at its highest point above the valley floor. The walls (slopes) of Cerro Prieto are very rough and contain very little soil if any, small amounts of soil being present on the rim with a type of bunch grass growing in scattered patches in it. Crevices and small caves + crannies are present on the outside slope and also on the inside walls of the crater. The mountain is elliptical in shape and guessed at about 5 mi diameter. The rocky slopes are bare of vegetation.

Large numbers of large bats (Macrotus?) were seen flying from the mountain at 7:30 P.M. (Sunset) and the smaller Pipistrellus were seen feeding low among the mesquite about 15 min later.

Two small squirrels were seen feeding in sandy roadway 100 yds <sup>west</sup> north of camp.





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April 17 Cerro Prieto 30 ft 20 mi SSE Mexicali, Baja Calif.  
this afternoon. Dr Benson said they were probably Citellus tereticaudus from my description.

Many Nighthawks hide among the mesquite during the daytime in the sandy areas at the mountain base 100-500 yds west of camp. Cottontail signs are plentiful.

Shot 4 Dipsosaurus (#60, 61, 62, 63) and one Crepidopterus (#64) in sand at base of mountain slope between 1 and 3 P.M. All the Dipsosaurus were under or in dead brushwood ~~on~~ the sand within 75 feet of the igneous talus slopes except the small one which was shot on hard sand — blending in so well with the sand that I could not distinguish it from a crevice at 50 feet. I had to dig one wounded Dipsosaurus out of the soil and talus conglomerate.

Birds seen in the mesquite at base of slope this afternoon were a flock of probable Gambel Quail, an Olive-sided Flycatcher, a Black-throated Grey Warbler, a small Thrasher, and a small flycatcher (Western?).

Set out 110 traps tonight: 50 live traps where volcanic rock borders desert sand





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April 17 Cerro Prieto, 30 ft 20 mi SSE Mexicali, Baja Calif.  
and mesquite, and 50 Museum Specials in  
a similar association; and 10 Schuyler traps  
higher in rocks.

The mosquitoes are very bad at night.  
April 18 4:00 P.M. Have moved back to the irrigation  
ditch for the night in order to be cooler  
under the mesquite and take baths and  
wash our clothes. We moved from the base  
of Cerro Prieto about 3:00 P.M.

100 mouse traps (50 live and 50 Museum  
Specials) set in rocks near sand and  
mud flat last night caught 1 Perognathus  
baileyi, 5 Perognathus spinatus, ~~and~~ two  
Peromyscus eremicus, and 5 Perognathus  
penicillatus. 10 Schuyler traps set higher  
in rocks caught nothing.

Minimum temperature last night was  
67°F; Maximum (about 1:00 P.M.) was 96°F.  
The day has been sunny and clear, a nice  
breeze blowing from the north.

We are breaking camp and heading back  
to Mexicali tomorrow morning.

April 19 (Written in Mexicali). It was cool last night;  
minimum temperature being 62°F. Dr. Benson  
shot a ~~Peromyscus~~ <sup>Eutamias</sup> last evening, and I shot  
one female Pipistrellus hesperus and one  
female Tadarida mexicana. Dr. Benson found





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April 19 Cerro Prieto, 30 ft 20 mi SSE Mexicali Baja Calif  
a dead Eumops about fifty yards from  
camp near the irrigation ditch. The skull  
was saved and I believe measurements were  
taken.

Are departing for Laguna Hansen this  
afternoon.

April 20 Alaska 4400 ft Baja California  
8:00 AM We had a rough trip here from Mexicali yester-  
day. Just after starting the grade to Alaska  
the International truck died and could be  
started only after taking out the gas bowl  
and cleaning the small strainer immediately  
above it, and then blowing through a section  
of the fuel line between it and the tank.  
The International ran fine for about a mile  
up the grade then died completely again.  
This time Murray and Dr. Benson took the  
whole fuel pump, line to the carburetor,  
and gas bowl off and cleaned the whole  
assembly in gasoline. In addition the  
line was blown in until bubbles could  
be heard in the gas tank. The car ran  
upon reassembling the fuel system upon  
priming with white gas through the air  
intake of the carburetor — long enough  
to take us about 50 yds up the grade.  
The remainder of the grade (about 5 mi)





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April 20 Alaska 4400 ft Baja California  
was made by priming the carburetor about eight times through the air intake. The car occasionally started after standing but usually died immediately, sounding as if it weren't getting gas.

We climbed about 4,000 feet in what seemed to be about 10 miles, the road a continuous grade upward and doubling back upon itself constantly until the top was reached. From the top (summit) the lights of Mexicali could easily be seen.

The terrain changed from the desert association at the foot of the grade with ocotillo, cholla cactus, and ironwood to the piñon pine and scrub oaks in the pinkish boulders of the summit. This region is made up of rounded granite boulders, while the desert area was mainly fragmented rock.

The canyon at the base of the grade contained water, some of it running in a small stream bordered by willows and mesquite. Evidence of flash flooding is everywhere, the stream channels being very straight and deep, surrounded by piles of large boulders. The canyon walls are highly metamorphosed and the more





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April 20 Alaska 4400 ft Baja California  
resistant quartz veins stand out in places from the less resistant mother rock. Stratifications stand vertical or near to it and faulting is abundant. All slopes in the canyons are steep, usually precipitous.

The road up the grade is good - better riding than that across the desert, and not too steep (second gear most of the way for the heavy-loaded International truck). The grade road is wide enough for only one automobile except for frequent spots for passing, and in good condition.

Alaska is a bus stop for the Mexicali - Tijuana + Mexicali - Ensenada bus lines.

A California Ground-squirrel was seen at the base of the grade near water. The temperature this morning at 6:00 A.M. was 55° F.

We are camped about  $\frac{1}{2}$  mile south of Alaska on the flat summit. The sun is shining on our camp, but to the south and east are dark rain clouds, from which long streamers of rain are falling. This is a wonderful respite from the desert heat and dust.

The town of Alaska (it says Alaska on the map, but the inhabitants seem





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April 20 Alaska 4400 ft Baja California  
~~unfamiliar~~ (unacquainted with the name) is an  
agglomeration of a dozen or so buildings  
along the road. On some maps, Alaska  
is known as "~~El Rumorosa~~" "El Rumorosa".

Killed two Sceloporus lizards this morning  
and saw many more on the large granite  
boulders. They stand out very prominently  
against the light granite. Saw many  
Eutamias merriami this morning.

April 20 Agua Hedionda 32°30'N 116°16'W Baja California  
~~unfamiliar~~

Arrived here about 4:00 P.M. after leaving  
the Alaska camp early in the afternoon. Saw  
one Citellus beecheyi near a ranch house on  
the trip and one jack Rabbit.

The road was poor but entirely navigable  
for the trucks. The difficulty with the  
International truck has been solved, Dr.  
Benson locating a leak in the gas line  
and spending the late afternoon here  
soldering it up.

We are camped on the west side of  
a very broad flat canyon, surrounded  
by the rare "Red Shank" brush. Large  
granite boulders project above the tops  
of the Red Shank in scattered groups.  
We are by a spring marked by four willow  
trees. The water is murky and green and





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April 20 Agua Hedionda,  $32^{\circ}30'N$ ,  $116^{\circ}16'W$  Baja Calif.  
runs into a trough sunk in a depression  
for cattle, a dead steer nearby probably  
attesting to its potability.

I set out 50 live traps in the Red Bank  
and nine Schuyler traps near Neotoma houses  
in the boulders. At the time of writing I  
have already caught one Peromyscus man-  
iculatus (9:45 P.M.).

The night promises to be quite cool  
( $56^{\circ}F$  at 8:00 P.M.) and dew can be felt  
on the equipment.

April 21 Minimum temperature last night was  $32^{\circ}F$   
and it remained cool through noon.

The 50 live traps contained 1 ♀ Dipodomys  
agilis (#81), 1 ♀ Peromyscus californicus (#82),  
and 1 ♀, 2 ♂ Peromyscus maniculatus (#84, 85, 86).  
Nine Schuyler traps baited with dried peaches  
caught 1 ♂ Peromyscus californicus.

The Schuyler traps were set beside  
rat houses built in the crevices in large  
isolated granite boulders that dot the  
landscape, but no wood rats were  
caught. The moon was almost full last  
night.

Birds seen at spring this morning: Horned  
Lark, Pileolated Warbler, Ash-throated Flycatcher,  
Scott Oriole, Western Tanager, Calif. Jay,





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# Journal

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April 21 Agua Hedionda  $32^{\circ}30'N$   $116^{\circ}16'W$  Baja California  
California Quail; heard the Swainson Thrush,  
Wren-tit, a Thrasher, Killdeer. Many Lozes  
drank from the trough and pools in the mud.

Departed for Ensenada via Tecate +  
Tijuana about 1:00 PM. Arrived Ensenada  
about 6:00 P.M. after a pleasant drive over  
paved roads from Tijuana to here.

Last night was clear, with a full moon,  
a possible explanation for the scarcity of  
the catch. Today was clear, the sun shining  
brightly with clouds only in the east during  
the early morning.

Archaeological site: Scattered between the  
granite boulders north and south of the  
spring are plentiful fragments of pottery  
of very hard substance, about  $\frac{1}{4}$  in thick  
and unglazed. Pottery color was reddish  
brown and dark gray. Outside surface  
skillfully smoothed, inside surface with  
moulded appearance. Two fragments of  
bifaced manos were found, but no evidence  
of metates.

April 22 Ensenada Baja California

9:30 A.M. Are waiting for repairs on  
the International truck. The overload spring  
on the left rear side has slipped backward  
and out of line.





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April 22 Ensenada Baja California  
~~xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx~~

We camped last night by the shores of the bay approx.  $\frac{1}{2}$  mi W of Ensenada. Minimum temperature last night was  $55^{\circ}\text{F}$ , the sky being overcast all night. The sky was clear at 6:00 AM, becoming overcast again at 8:00 AM.

April 23 San Fernando Mission 1500 ft. Baja California  
~~xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx~~

8:30 P.M. Camped last night at San Quintin 500 yds from the bay after eating dinner at Santo Domingo at the Gomez place. A new highway is under construction from Santo Tomas to San Quintin where it leaves off and the old road takes over again. Saw a Marsh Hawk this side (south) of Santo Tomas.

None of the old buildings at San Quintin are standing and all that remains of the wharf are the small pilings and vertical cross pieces. We arrived after dark and set no traps. Minimum temperature last night was  $54^{\circ}\text{F}$ , a strong wind blowing all night with heavy overcast.

The road runs over a coastal plain from Santo Tomas to Rosario characterized by Agave, Pitays, and Cholla cacti and dwarf buckeye. All the plants are low, few exceeding 5 feet in height. It was





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April 23 ~~San Fernando Mission~~ 1500 ft Baja California  
very cold and windy during the trip.

At Rosario the road turns inland and climbs incessantly to here, some of the hills being so steep that low gear was needed. As we climbed I noticed the vegetation change to the curious Cirio trees and Cardone cacti mixed in with barrel cactus and Pitaya. The barrel cactus and agave are blooming now.

We stopped at a turquoise mine about 13 miles from here and Dr Benson caught a Choronycteris mexicana with a hand net.

4 About 12 shell middens were seen along the road between San Quintin and Rosario

We are camped about 100 yds south of Mission San Fernando on the road leading to it. At present there is a fine stream running into the meadow below it, and three houses near it. The stream flows into large clear pools in the meadow and cattle graze in among the bunch grass and tules. At present 9:00 A.M. a chorus of Hyla notes are reaching our ears from the meadow although there is a pronounced chill to the air.





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April 23 ~~San Fernando Mission 1500 ft Baja California~~

Set out 50 Museum Special traps through the bunch grass and along the ~~tules~~ tules and mesquite. The moon is about full tonight, the sky is clear and the wind blowing in gusts.

Nothing remains of the old mission except several walls, badly weathered.

April 24 7:00 AM Minimum temperature last night was 32°F.

50 Museum Specials baited with walnut and set in bunch grass and along stream and mesquite, and tules caught 3 Peromyscus maniculatus and 3 Reithrodontomys.

11:15 AM. The day has turned out to be warm and sunny with a breeze blowing from the west.

Birds seen and heard: California Quail, Coot, Violet-green Swallow, Gila Woodpecker, a small blue Heron with an orange throat, Blackbirds, Chat, Killdeer.

The mission is located on the north side of a canyon running E W, and situated about 100 yds from the marsh at the canyon bottom. Another building in the same state of repair is located about 1000 yds W. in the canyon, it being on the south side. I assume it too is part of the old mission.





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April 24 ~~At~~ San Fernando Mission 1500 ft Baja California

The canyon slopes are steeper on the south side at this part and are covered with frutia mainly with a few scattered Cirio trees. The north slopes are of less gradient and contain little Cirio but much Cardone, Cholla and Pitaya mixed in with the Frutia. The soil is of a conglomerate of fragmented rock and a little dirt. The marsh at the canyon bottom is approx. 500 yds wide.

April 25 12½ mi by road south of El Marmol 2200 ft Baja Calif

Minimum temperature last night was 43°F. Our camp is located in country full of large granite boulders, and fine gravel washes. The most prominent vegetation is the large Cardone cacti and the grotesque Cirio trees. Northwest and west of us are several table mountains, probably of lava, and of a dark color. Scattered hills of the granite boulders also occur. Other plants include the Cholla, Mesquite, Pitaya and Barrel cactus. The landscape is weird and beautiful, some of the granite boulders having odd concavities presumably worn by wind and sand.

A Red-tailed Hawk has a nest in the fork of a Cirio near here. There are wood





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April 25 <sup>1</sup>/<sub>2</sub> mi by road south of El Marmol 2200 ft Baja Calif.  
rat signs among the boulders.

Shot two Brush Rabbits this morning, but did not put up the specimens, one being immature, the other being badly mutilated. We fried them for breakfast. Dr. Benson put up a immature specimen he shot.

I set out 50 live traps last night and could find only 49 of them this morning. Caught were 1 Dipodomys agilis, 2 Dipodomys merriami, and 1 Peromyscus fallax.

No bats were seen at dusk last night, but one was heard after dark.

April 25 Mine La Fortuna 2350 ft 2 mi N Laguna Seca Chapala Baja Calif

Arrived here at dusk after a very rocky, bumpy ride from our last camp. We left the previous location about 1:00 P.M. and passed through boulder country and then lower country on our trip. Very tall palms were present near Catavina and also at and near houses south of it. The Cardones and Cirio thinned with the disappearance of the boulders and gave way to barrel cactus and Sotillo in the latter half of the days trip. Cirio can still be seen however on the mountainsides.

Seen during the trip were two Antelope Chippiniks and one Red-tailed Hawk.





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April 25 Mina La Fortuna 2350 ft 2 mi N Laguna Seca Chapala, Baja Calif

Are now camped at the stamp mill section of the old La Fortuna mine in the foothills rising from the north end of Laguna Seca Chapala.

The air is still at the time of writing and the temperature  $58^{\circ}\text{F}$  (9:30 P.M.). A cool breeze was noticed from 3:00 P.M. and just died down. The sky is clear and not a cloud has been seen all day.

The terrain here is of highly metamorphosed rock, that on the surface being reddish. The hills are sparsely vegetated, short shrubs, cholla cactus and occasional acotillo noticed. This dry lake bed is the third of a series of dry lake beds traversed since Catavina. The lake beds seem to be descending this one being lower than the previous two, etc. The second lake bed contained a spectacular mountain of huge granite boulders in its center.

No water available since Catavina.

April 26 12:30 P.M. Had a bat hunt in the mine diggings last night from 10:30 to 11:30 and this morning at 6:30. Caught in nets were 8 Antrozous and 8 Choeronycteris mexicana. Bats were caught in shafts and pockets leading off slopes in the





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April 26 Mina La Fortuna 2350 ft 2 mi N Laguna Seca Chapala Baja Calif  
mine. The slopes are inclined at an angle of approx  $45^\circ$  and going is difficult in some places. Also seen in the mine were the open nests of Wood Rats surrounded by piles of Cholla spines.

The mine has been in disuse for many years as evidenced by badly rusted equipment and the remains of a stamping mill. We are camped by the mine, about 50 yds north of two ~~debris~~ dilapidated stone houses and beside the rusted boiler of the stamping mill.

Below us stretches the dry lake bed with the short stubby bushes around its edge.

Ocotillo and Barrel cactus are blooming at this time.

Minimum temperature last night was  $49^\circ\text{F}$ ; the temperature now (12:35 P.M.) is  $79^\circ\text{F}$ . A strong breeze is blowing from the south.

Shot a Vta stansburiana (#98) this morning in the lighted portions of the mine digging.

Quail can be heard at this time calling from the scrub brush and lava slopes below us.

April 27 2 Mi South Punta Prieta Baja Calif

Traveled yesterday through more of the dry lake bed series, each succeeding one lower than the former. Vegetation changes about halfway between the two spots to shorter,





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April 27 7 Mi. south of Punta Prieta, Baja California  
stouter Cirios, Elephantophrum, and Yucca.

Ran across a traveler that we had met on the dry lake bed previous to Laguna Secachayala. He had wanted water and a push out of the sand then, <sup>yesterday</sup> today he wanted a tow to Punta Prieta as his motor had failed. Towed him  $3\frac{1}{2}$  miles to Punta Prieta, arriving there about 6:00 P.M. yesterday.

Seen yesterday afternoon from the road: 3 Redtail Hawks that were of very dark coloration, 2 jackrabbits, 4 White-wing doves, 1 Rattlesnake (shot by Dr Benson), 2 horn toads (Benson + Tevis), + 4 Ravens in pairs.

A pleasant drive yesterday with a cool breeze.

Minimum temperature last night was  $44^{\circ}\text{F}$ ; it was  $56^{\circ}\text{F}$  at 7:00 A.M. with a high fog clearing about 8: A.M.

Heard coyotes last night, and saw one within 200 ft of camp.

April 28 30 mi S.E. Mesquital, 600 ft Baja California

1:45 P.M. An interesting drive from Punta Prieta yesterday. The topography and vegetation differs north and south of Miller's Landing. South of this place we noticed an almost complete absence





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# Journal

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April 28, 30 mi S.E. Mesquital, 600 ft. Baja California  
of Cirios, those present being short and stubby.  
The Ocotillo here is squat and highly branched,  
possibly a different species, and covered with  
what looks like Spanish Moss and is called  
Orchilla by Tevis. The Orchilla parasitizes  
everything, including the spines of the barrel  
cactus and the axils of the *Elephantopus*.  
*Yucca* is common here, and the vegetation much  
more dense than but few of the regions  
around Punta Prieta. Found a mushroom  
yesterday afternoon (*Coprinus comatus*) that  
measured 13 inches from top of pileus to  
base of stem. The cap was as yet sealed and  
it was in a highly desiccated condition. Weight  
of specimen was 112.7 grams.

Numerous lichens occur in this vicinity  
on rocks. The washes of the hills S.W. of  
Mesquital appear green because of a lichen, and  
isolated rocks were noticed that had a brilliant  
red lichen on their tops.

Surrounding us are hills topped with lava  
cap-rock, presumably the remains of the  
lava plateau south-east of here.

Another interesting plant parasite that  
occurs in this region on mainly Ocotillo  
looks like a spherical bird's nest and  
is about 8 inches in diameter.





Quast  
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April 28 30 mi S.E. Mesquite 600 ft. Baja California

The soil is coarse gravel in the rises and silt and sand in the heavily vegetated washes.

Minimum temperature last night was  $47^{\circ}\text{F}$ , maximum was  $90^{\circ}\text{F}$  (About 1:00 P.M.). It was very foggy this morning and cleared about 9:00 A.M. It was a light fog and did not interfere with visibility.

We are about 8 miles, direct, S.W. of Calmalli.

49 traps set last night in sand and silt among heavy vegetation (Yucca, Cholla, Icotillo, and brush) caught 2 Dipodomys merriami. Two traps were moved approx. 20 yards, presumably by Coyotes. Tevis had one trap lost and another badly battered (live traps) by Coyotes.

Sylvilagus bachmani and Lepus californicus abound in the heavy vegetation of the washes.

Bats were heard last night, but not seen at dusk. Dr. Benson shot a California quail from a flock of about 20 yesterday. Citellus tereticaudus leucurus are common among the heavy vegetation.

Tevis shot a California Jay this afternoon and a rattlesnake was shot by Dr.





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April 28 30 mi SE Mesquital 600 ft. Baja California  
Benson and a Horned Toad captured by  
myself yesterday afternoon.

Shell mounds are abundant between Punta  
Prieta and Mesquital.

April 29 Minimum last night was 50°F. No traps set.

April 29 Mission San Ignacio 500 ft. Baja California  
Arrived here about 7:00 P.M. after a very  
rough and rocky trip from our previous camp.

A change in the topography and vegetation  
occurred a few miles south of El Arco. The  
dense grouping of cactus, creosote, etc  
stopped with the ~~occurrence~~<sup>disappearance</sup> of the stable  
sand and silt soil and the vegetation became  
scant when we went beyond El Arco.

South of that point the road passes through  
very rocky land with hills topped with  
lava cap rock. Beyond that we went  
through desert with shifting sand and  
very little vegetation. The Cirios stopped  
completely at El Arco. The sand continued  
to a point called Los Angeles Coral where  
we started to climb onto the lava plateau  
and San Ignacio. The lava plateau was  
with scant vegetation and the Cardones  
became the outstanding plants - even they  
were yellow and appeared diseased, and  
I noticed a high percentage of dead ones.





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April 29 Mission San Ignacio 500 ft. Baja California  
something not seen previously in the north.  
The road became bad and was composed  
of small boulders entirely in some places.  
The terrain covered today can be divided  
into three regions: one, the fertile, heavy  
vegetation before El Arco; two, the  
shifting sand region to Los Angeles Canal  
with very sparse vegetation, mostly creosote  
bush and a few cardones; and three, the  
arid lava boulder region to San Ignacio  
with creosote (sparse) and a few diseased  
and dead Cardones. The road travels  
over what appears to be eroded lava  
plateau material, the intact lava cap  
rock and mountains being visible to  
the east during the whole day.

The mine at El Arco has been in  
disuse for a few years, but all the  
machinery and buildings are still standing,  
some being badly in need of repair. Water  
has filled the deep portions of its shaft  
(below approx 150 ft. of the surface), and  
we explored the diggings on the intervening  
level for bats, but none were found.  
Dr. Benson caught two Myotis volans  
that had been hiding in the thatched  
palm-frond roof of a dilapidated adobe





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# Journal

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April 29 Mission San Ignacio 500 ft. Baja California  
~~mission San Ignacio 500 ft. Baja California~~  
house.

Seen near the mine were two White-winged doves, a Callisaurus, and a small Gambelia lizard.

Two Horned Toads and a large Gambelia lizard and a Race-runner were procured by Tevis within 10 miles south of El Arco in a sandy region with separated creosote and cacti and Dr Benson shot several Citellus leucurus in that region.

A Red-tailed hawk (lighter than those of the Laguna de Chapala area) was seen in the eroded lava-plateau region north of San Ignacio and also one Citellus leucurus. American Ravens are common around El Arco, also jackrabbits and Brush-rabbits.

San Ignacio is a true oasis - the kind that is written of in stories of the Sahara. One drops from the hot, dry, rocky, eroded lava region into a small area heavy with palms and vineyards. The mission appears to your right on the road, beyond the palms and looks very much like a mosque. Water appears to be abundant here.





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April 29 Mission San Juanico, 500 ft., Baja California

We are staying in one of the rooms of buildings attached on the east side to the old mission. A few troops are garrisoned in the west wing of the building.

At least several hundred Tadarida mexicana roost in the ~~attics~~ attics and stone niches of the mission. We caught an estimated 50 in hand nets from the attics and doorways of the mission & attached buildings this evening while the crowd of kid and townspeople watched and shouted whenever we made a haul. Murray climbed up on a ladder to a small opening in the stone wall and got a netful of Tadarida after poking into the cavity inside with a stick. Other bats that were disturbed from their roost flew in a large swarm within the mission proper, circling around the dome and hanging on the altar. At nine P.M. the bats were still flying about within the mission.

Dr. Benson and Murray caught a Canyon wren in one of the stone piers in back of the mission. It is probably the one that could be heard before dark singing from the cornices and walls of





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# Journal

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April 29 Mission San Ignacio 500 ft Baja California  
~~unpublished manuscript~~  
the old mission. In another room adjoining  
it and a neighboring room 3 Macrotus  
were caught by Dr. Benson (10:15 P.M.).

The mission is very well built and in  
a good state of repair, and in use at  
present.

April 30 9:30 P.M. Minimum temperature last night  
was 53° F.

15 Myotis yumanensis were captured this  
afternoon in an unused stone storeroom  
east of the mission, and three Macrotus  
californicus and one Tadarida mexicana  
were seen this evening in the unused rooms  
adjoining the mission (see species accounts).

The Canyon wren captured last night  
escaped late this morning, but not after  
another was heard and seen on the mission  
walls.

San Ignacio is surrounded by volcanic  
rock in a layer over what appears to  
be sandstone or limestone.

May 1 Minimum temperature last night was 58° F.  
Bats seen last night before 11:00 P.M. in  
mission rooms have been Myotis yumanensis,  
Tadarida mexicana, Antrozous, and Macrotus  
californicus.





Quast  
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# Journal

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May 1 11 mi SSE. Santa Rosalia Sea Level Baja California

Arrived here about 6:00 P.M. after the equivalent of a 3 hour trip from San Ignacio. We passed by the Tres Virgenes Volcanoes and fresh-looking lava-flows that were probably forced out when one of the mountains was said to erupt, about 1746.

Seen on the trip from San Ignacio to Santa Rosalia were a California Jay, a Red-tailed Hawk and an Antelope Ground-squirrel. A Frigate bird was seen by Tevis just before we reached Santa Rosalia.

We are camped by the old town of San Lucas, about 200 yds east of the road and near a small estero where a boat was being built. A few mangroves are growing around the shore and may also be seen growing on a long sand spit south of us. San Marcos Island is east of us.

Several small bats were seen feeding after sundown (7:30 P.M.) and one after dark (8:00 P.M.).

Before we left San Ignacio the priest said that there are pictographs in red pigment in caves about 1 Km. north of the old mission.

May 2 Mulege 25<sup>+</sup> ft Baja California

Arrived here at noon after leaving previous camp about 8:30 A.M.





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# Journal

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May 2 Mulege 25<sup>±</sup> ft. Baja California

Minimum temperature last night at our camp 11 mi SSE Santa Rosalia was 57°F. Birds seen near there included Seallows (flying over the estero), an Osprey, and a Loggerhead Shrike. One Antelope Ground-squirrel was seen 1 mile south of there.

6:00 P.M. We are comfortably camped in one of the rooms of the Government building in Mulege. A spring was broken in the Dodge truck and is being repaired at present.

Just after we arrived at this town (12:00 A.M. - noon) The four of us caught 2♂ and 2♀ Tadarida mexicana in the ceiling between a 2 x 12 and the wall (see species account). At 5:00 P.M. we caught approx 40 Myotis yumanensis in a crevice between 2 x 12's that support a roof over a large porch in the back of this building (see species account).

Mulege is placed in an arroyo about one mile from the sea. It is very similar to San Ignacio in its setting in the volcanic mountains and its many palm trees and pond in the center. There is a government prison up on the hill and ~~near~~ we are placed directly beneath it. The mission has been rejuvenated and its neat, white appearance is probably nothing like the old building. No bats





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May 2 Mulege 25<sup>+</sup> ft Baja California

o. signs of them were seen in the mission.

About 20 Frigate birds <sup>fresh water</sup> were seen soaring and diving over the pond bordered with palm trees below the mission.

One of the local inhabitants told us today that everybody here gets malaria attacks in the summertime.

May 3

Minimum temperature last night was 56°F.

Two Myotis yumanensis were caught last night by the jail up on the hill, and a Tadarida mexicana flew into the room about 9:00 P.M. last evening.

Sila Woodpecker heard at 9:30 and 10:00 A.M.

4:30 P.M. Saw two groups <sup>of Frigate birds</sup> of about five individuals each in vicinity of large pond below the mission. The second group were evidently bathing, for they would dive down and graze the surface of the water one after another. All they seemed to do was drag their feet in the water. The first group was flying high in the air away from the pond and the birds would dive about 25 feet in the air with wings bent, shaking themselves while in the dive. They possibly were drying themselves after their fresh-water bath.

Saw about 5 Calisaurus along the creek below the dam. They appeared darker than











Quast  
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# Journal

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May 3 Mulege  $25^{\pm}$  ft. Baja California  
~~minimum minimum minimum minimum~~  
great and eccentric rate of speed. At 9:00  
P.M. I returned to find thrashing cockroaches  
20 feet from the latrine and saw them climbing  
the walls of the building outside. The latrine  
walls, floor, and ceiling was one moving mass  
of the insects and they raised a great commotion  
as they rattled over the wood and dropped  
from the walls and ceiling. Two of us, regretfully,  
had to use the latrine and I guarantee that  
it is one of the most eerie and unusual ex-  
periences that one can undergo. At 10:00 P.M.  
they are thrashing about 50 feet from the  
latrine, a few coming into the room in  
which we are working. The commotion in the  
latrine is still terrific.

May 4 Minimum temperature last night was  $55^{\circ}$  F.

Caught last night in Museum special  
traps by Dr. Benson and Tavis were 1 ♂  
Dipodomys merriami and 5 ♂ Perognathus  
spinatus. Murray had 50 traps out too but  
caught nothing although several of his traps  
were sprung. Traps were set mainly in the  
lava rock fragments; the Dipodomys was  
caught in sand.

♣ Visited a bat cave about  $\frac{1}{2}$  mile up  
the canyon from the mission this afternoon.  
It is a natural cave that extends on an





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# Journal

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May 4

Mulege 25<sup>±</sup> ft. Baja California

incline upward for about 200 feet through three constrictions and three broader cavities. The slope was about 20 or 30 degrees and at one place it is necessary to lie flat and pull yourself through the fine dust that had accumulated in the cave. The cave opening is hidden from the valley floor by a lip of fragmented rock. Within the cave there are many side passages of small size leading to small pockets. The whole cave is filled with very fine dust. The bats were roosting in a second widening of the cave about 150 feet from the opening and considerably higher than the rest of the cave. There were many bats in the cave of which I netted four (1 ♂ Mormoops megalophylla and 3 ♂ Macrotonus californicus). Dr. Benson caught 10 Mormoops (4 ♂, 6 ♀) and 20 Macrotonus (7 ♂, 13 ♀). Dr. Benson also caught 4 (2 ♀ ad, 1 ♂, 1 ♀ juv) Leptonycteris (?). The three types of bats were the only ones noticed or caught.

It has been decided that the locality of the cave is  $\frac{1}{4}$  mi south of the mission at 100 feet.

May 5

Bahia Concepcion 13 mi SE Mulege, Baja California

Minimum temperature here last night was 68°F, Maximum today was 92°F. Today is clear and warm, the light being intense on the weathered





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# Journal

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May 5 Bahía Concepción 13 mi SE Mulege Baja California  
shell beach in front of camp.

We are camped in several wave-worn caverns by the beach of a small bay connected to Bahía Concepción (Conception Bay).

The drive from Mulege yesterday took about an hour over fairly good road. Seen along the trip were: Vermillion Flycatcher and an Osprey, one Jack Rabbit and an Antelope Ground Squirrel.

49 live traps set in rocks above sand flat east of camp last night caught 4 Perognathus spinatus and two Peromyscus eremicus. Caught by others in addition were Neotoma lepida and Perognathus arizonae and one Dipodomys merriami.

Conception Bay is surrounded by high hills of lava rock. Mangroves grow around the esteros and Cardone, Pitaya, Mesquite, Cholla, and Creosote in the sandy washes. Elephantoprium is found in the lava rock of the steeper hills. Mounds of shells are almost continuous along the many beaches of the bay's perimeter.

Birds seen today included one Osprey, two Oystercatchers (One shot by Dr. Benson) and a Frigate Bird. The waters teem with fish, large and small, but so far Dr. Benson





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May 5 Bahia Concepcion, 13 mi SE. Mulege Baja California  
~~minimum temperature 69°F~~  
and I have been unable to look any  
with our fishing outfit.

Dr. Benson shot a Myotis californicus  
last evening at dusk.

Caught a small Rattlesnake about 5 P.M.  
that had probably been quietly lying curled  
in the sand in a cavern 20 feet from Tervis who  
was shelling clams. The snake did not move  
when approached and did not rattle when picked  
up with a shovel and moved into the open. It  
started crawling back to the rocks when  
placed on the ground and it was stopped by  
holding it down with the shovel. It then  
began rattling and attempting to bite the  
steel blade. Dr. Benson killed it by breaking  
its neck and its stomach contained one  
male Perognathus spinatus. The snake is specimen  
no 138; the Perognathus skull, no. 139.

May 6 3:30 P.M. Minimum temp. last night was 69°F.  
Maximum today was 86°F. At present the temp-  
erature is 85°. So far the day has been warm,  
clear and windless, but now a slight breeze  
is starting.

49 live traps set last night in sandy  
area behind shell beach and below rocks  
in which traps were set <sup>previous night</sup> caught: 6 ♂, 1 ♀  
Perognathus arnatus; 1 ♀ Perognathus baylei,





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May 6 Bahía Concepcion, 13 mi SE Mulege, Baja California  
~~numerous Peromyscus eremicus~~  
and one Peromyscus eremicus. Traps were  
set beneath or near large bushes.

Birds seen so far today are 1 Pelican, 5 or  
6 Frigate Birds, 2 Seagulls, and several  
Ospreys. The Frigate Birds were feeding  
together about  $\frac{1}{2}$  mile offshore.

May 7 Minimum last night was  $71^{\circ}$ , maximum  
Today was  $92^{\circ}$  F.

49 live traps baited with bird seed and  
set last night in sandy area in back of  
beach N.E. of camp caught 1 ♀ Dipodomys  
merriami, 1 ♂ Perognathus baylei, 2 ♂ 1 ♀ Perognathus  
spinatus, and 1 ♂ 2 ♀ Perognathus arenarius.  
Traps were set among large "Mangle Dulce"  
and Creosote bushes in association with  
Cardone, Cholla, Pitaya, Palo Verde, Mesquite,  
and Elephantaphium. The yield was low  
last night possibly because of a herd of  
cattle that unexpectedly bedded down there.  
One part of the sandy area is a dried salt  
marsh, and sand and salt marsh are board-  
ered by talus (lava + conglomerate rock) and  
alluvial material. Above rise the rocky  
hills with mesquite and numerous small  
caves.

S.W. of our camp is a estero bordered  
by mangroves and a salt marsh. Clams





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# Journal

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May 7 Bahia Concepcion 13 mi SE Mulege, Baja Calif.  
were dug from the estero yesterday by Dr. Benson and Murray and made a fine stew.

Birds seen this morning were an Osprey, several Frigate Birds and Pelicans diving for fish at the entrance to the bay, and two Oyster-catchers. A fisherman sold us several large Conchs obtained from the bay and we had them for lunch.

Left camp about 2:00 P.M.

May 7 Rancho Cadeje, SW end Bahia Concepcion, Baja Calif.

Arrived here about 5:30 P.M. after helping repair a blowout on the International Truck. Seen on the way here were 4 Brown Pelicans and a Citellus beecheyi that was hopping across boulders above the road about half way down the bay. The Pelicans were flying in formation about 5 feet above the water. They were arranged in a straight line and would flap their wings together and then all glide together. The rear Pelican evidently got his cues from the previous bird for he lagged considerably in his flapping and gliding.

Murray shot a Pipistrellus hesperus this evening at dusk. About eight were seen flying singly and feeding around the





May 7 Rancho Cadeje, SW end Bahia Concepcion, Baja Calif.  
~~Minimum temperature minimum minimum minimum~~  
"Mangle Dulce" and Mesquite that grows  
thickly around our camp. A larger  
bat was noticed flying at dusk - about  
the size of a *Tadarida mexicana*, but was  
not obtained either. At the time of writing  
(9:15 PM) bats may be heard "chipping"  
in their flight overhead.

May 8 Same Location. 6:30 A.M. 49 traps set  
on rocky hillside on W side road caught 2 ♂  
*Perognathus spinatus*. Traps were baited  
with bird seed and set among an association  
of *Elephantaphrium*, Mesquite, Barrel Cactus,  
Pitaya in an area containing cattle.

The hills are sparsely vegetated and  
steep being composed mostly of mother-rock  
and talus.

Minimum temperature last night was 66°F.

We are about 300 yards north of Rancho Cadeje  
proper and about 50 feet from the ocean.

The wind blew in strong gusts all last night &  
the sky was overcast. Clear this morning with a  
mild breeze. Tevis caught one ~~*Peromyscus*~~  
*Perognathus baileyi*. No *Peromyscus* were caught  
by the group last night.

Seen this morning - several White-winged  
Doves, a Gila Woodpecker, some Quail, and  
a flock of about 30 Pelicans flying very high





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Journal

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May 8 Rancho Cadeje SW end Bahia Concepcion Baja Calif.  
and in formation

May 8 San Jose de Comondú 700 ft. Baja California

Arrived here about 5 P.M. after a very rough trip from our previous camp. The road led over pure lava country, the terrain usually being mountain or hills of lava boulders over which the road wound. The bad road was all on this side of Camipole, it being fairly easy going along the shores of Bahia Concepcion. Between Bahia Concepcion and Camipole the numerous washes are covered with Organ-pipe cactus, Cardone, Palo Verde, Palo Blanco, and Creosote. Just past Camipole the road leads through a wash with large pools of water and very large mesquite, climbing afterward into the very rough lava country and steep rough grades. Growing in the lava boulders were a few Palo Verde (appearing different than the northern ones), Cardone, and Pitayo. Large areas are passed about 10 miles north of Comondú in which the terrain is virtually paved with large flat boulders for miles around. Lava flows, and old volcanic cores are evident everywhere. The rough lava country continues to Comondú where the road drops





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May 8 San Jose de Comondú 700 ft Baja California  
~~San Jose de Comondú 700 ft Baja California~~  
down into a deep arroyo with a narrow  
strip of palm tree and fields growing  
down its center. Seen in the lava was  
one Citellus leucurus and one Red-Tailed  
Hawk. White-winged Doves were common along  
the shores of Bahía Concepción

May 9 Same Location. Minimum temp. last night was  
54°F. Temperature at time of writing (11:00 A.M.) is  
76°F.

saw three Citellus atricapillus this  
morning in rocks near reading road leading  
into town from the north. Dr. Benson shot  
one from a different location.

shot one Streptosaurus and one Cnemidophorus  
clathrorus this morning in N.W. side of arroyo.  
The Streptosaurus (#160) was shot while squatting  
motionless against the side of a large boulder  
in a boulder pile beneath cliffs N.W. of town.  
Several others were wounded, but they could  
not be recovered from the rock spaces. The  
Cnemidophorus was one of many seen  
in the border zone between large lava  
boulders and the sand of the arroyo floor—  
again N.W. of town.

♠ There are pictographs drawn with a red pigment  
on the cliff faces N.W. of town.

Dr. Benson shot a Pipistrellus hesperus that





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Journal

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May 9 San Jose de Comondú, 700 ft Baja California  
~~San Jose de Comondú, 700 ft Baja California~~  
was flying down the main street last evening.

6:00 A.M.; just set out 49 live traps along running stream at arroyo bottom. The water course is narrow, but the stream is flowing rapidly. Surrounding it are palm trees, bermuda grass, composite plants in bloom, and cultivated fields containing mostly fig tree and corn. The bottom land is not rocky, being fully cleared, and the soil is damp and soggy in various places. Some of the black figs are ripe.

Searched for bats this afternoon in small caves located in cliff faces about 300 yards E. of the mission. No bats were found, although droppings from their night hangings were evident in a number of places. Found an arrowhead made out of obsidian in the entrance to one of the caves.

Caves and crevices are abundant in the cliff faces, possibly explaining the lack of bat roosts in the town.

Today was sunny and fairly cool - one of the local residents says that it is about the same in July.

May 10 Same Location. Minimum Temp. last night was 56°F.





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Journal

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May 10 San Jose de Comondú 700 ft Baja California  
~~San Jose de Comondú 700 ft Baja California~~

Visited small caves about  $\frac{3}{4}$  mile SW of town last night hoping to obtain bats that would hang in them temporarily but obtained none although several were heard.

Caught one Lacho (see species account + Catalog) last night on boulders beneath the caves.

The caves were small and the openings large and high, making them probable night-hanging places for bats.

Lost one live trap that was set by a trail last night (description of trap location under May 9). The 48 remaining traps caught 4 ♀ Peromyscus eremicus, none containing embryos.

Shot bats last evening from 7:15 to when it was too dark to shoot (7:45). Pipistrellus hesperus were flying at 7:15 P.M. and Eptesicus fuscus appeared about 15 ~~minutes~~ minutes later. Both were obtained by the group, and I obtained two of each. The bats were feeding among the tall palm trees of the arroyo, just west of town.

May 11 Pozo Grande 25<sup>+</sup> ft 25°46'N 112°02'W Baja California  
~~Pozo Grande 25<sup>+</sup> ft 25°46'N 112°02'W Baja California~~

Shot two Eptesicus fuscus flying over water hole about 200 yards west of town last night. Others of the group obtained Myotis yumanensis. (see species account).





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# Journal

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May 11 Pozo Grande  $25^{\circ}46'N$   $112^{\circ}02'W$  Baja California

Pozo Grande is a grouping of about eight dilapidated houses near the road crossing the Magdalena Plain. Immediately east of the houses and near the water hole 200 yards west of the houses are rocks and strata containing a very high concentration of shells and other fossils.

A few willows grow around the pond and palms east of it near town. The surrounding flat countryside contains Opuntia, Mesquite, and Cardone.

We were told that the water hole contains water all year around and that it is frequented by many bats in the evening - especially in the summertime.

Caught one Toad (#170) last evening hopping in soft sand 25 feet above the pond.

The pond contains one Grebe and a few fish. Many ducks (Baldpate?) frequent the pond at this time of year, about 50 attempting to land here at dusk.

The road from Comondú to here is in very good condition compared to the road north of Comondú.

Many sea turtles are caught by the residents in the ocean west of here.

Minimum temperature last night (Pozo Grande) was  $47^{\circ}F$ . The night was quite damp with





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# Journal

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May 11 Pozo Grande, 25<sup>+</sup> ft 25°46'N 112°02'W Baja California  
what appeared to be a light radiation fog  
this morning.

The pond is frequented by many Barn Swallows and Olive-green Swallows.

About five Citellus aticapillus were seen  
along the road just as the arroyo started  
opening into the Magdalena Plain.

May 12 24.3 mi by road SE of F/Refugio 100<sup>+</sup> ft 24°33'N 111°35'W Baja Calif.  
Minimum last night was 53°.

47 live traps set on plain among Cholla,  
Pitaya, and Cardones caught nothing. Dipso-  
dromys signs were apparent everywhere, however.  
Saw two bats flying at dusk last night.

Perognathus arenarius ~~at~~ and baileyi  
and Dipodomys merriami and agilis were  
caught by Dr. Benson.

A very desolate landscape - a rolling plain  
with dirty plants growing in the dust and sand.  
Pitaya "dulce" and "agria", Cardone, Opuntia cholla  
and Lumbos growing quite densely with intervening  
circular patches where ponds evidently stood  
during heavy rains. Most of the specimens were  
caught on the periphery of these circular mud  
flats devoid of vegetation - my traps were set  
in the denser growth and caught nothing.

May 13 Santa Ana Arroyo de Los Viejos, 25<sup>+</sup> ft 24°03'N 110°58'W, Baja Calif.  
Stopped here overnight for breakfast and dinner.





Quast  
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Journal

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May 13 Santa Ana (Arroyo de Los Viejos, 25<sup>+</sup> ft, 24°03'N, 110°58'W, Baja Calif.

The group shot and netted 7 bats last evening at dusk. The bats were flying about palm and "Mangle Dulce" trees adjoining a small pond into which water is dumped for cattle. All the bats were Myotis californicus of which I shot one male. I saw no bats that I could identify as other kinds than above.

Minimum temperature last night was 51°F, the night being very clear and still, with a light dew in the morning. A breeze arises about 10 A.M. each morning and dies about 5 in the afternoon.

Large abalones and oysters are obtainable about 5 miles north of here.

Saw several Antelope Ground Squirrels along road yesterday.

May 14 4 miles north of La Paz, Sea Level, Baja California

We camped in a salt flat in back of beach about 3 miles <sup>north</sup> ~~east~~ of La Paz.  $\frac{1}{2}$  mile ~~to the~~ W. of us is an oil storage depot and wharf.

Minimum temperature here last night was 67°F, noticeably warmer than Santa Ana.

The trip from Santa Ana was an easy one, taking only three hours. The first  $\frac{2}{3}$  of the trip was a gradual climb over the plain to the low summit before La Paz. The vegetation was typical of the plain region and appeared very dusty and dry. One Antelope Ground Squirrel





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## Journal

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May 14 4 miles north of La Paz, sea level Baja California  
was seen. The last third of the trip was a  
quick descent to the plain around La Paz.  
The road over the whole stretch is good, but  
dusty and hot. All of the roads, including  
this one, south of San Quintin have been but  
two ruts over the desert. Speed of travel is  
determined by how many bumps per second  
you think the car will stand or how fast  
the automobile will pull through the sand. Prob-  
ably the only dangerous sandy stretch is  
that just north of Santa Ana where the road  
goes near sand dunes of the Pacific Ocean.  
Here our truck had difficulty navigating  
the sand while going down hill and will  
undoubtedly have a difficult time pulling  
uphill through the sand on the way back. Truck  
drivers that travel that route usually drive  
over that section early in the morning when  
the sand is damp and heavy from the nightly  
fogs.

Shot one Cnemidophorus hyperythrus this  
morning at about 10:30. Lizard was shot beneath  
a low dead woody bush near Pitaya aqua  
and Lumbei at point where rocky hillside  
meets the salt flat on which we are camped  
(specimen no. 173).

Shot two Uta stansburiana this afternoon





Quast  
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Journal

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May 14 4 miles N of La Paz, sea level, Baja California  
~~in the hills~~ (174, 176) and one Citellus leucurus in the  
rocks east of camp. The Citellus was obtained  
at 4:00 P.M. (#175).

The day was very warm with a good breeze.  
Absolutely clear sky and temperature (max.)  
of 101°F in the shade under truck.

Set out 47 <sup>live</sup> traps in hillside among  
Cardone, Lumbini, Pitiaya aquia, Dysentia cholla  
and Puckley Pear (plus Flacarium, Cresote  
and Ironwood and other shrubs). Hillside  
composed of fragmented pink porous lava  
rock over soil and of low gradient. 5  
Schuyler sets placed along live trap line  
in likely looking places for Wood Rats.

The vegetation gets denser and taller  
as one approaches the suggestion of a cap  
rock formation at the top of the low hills  
east of camp. Many pocket-mouse workings  
are visible higher up on the hill - much more  
common than on lower portions. Larger boulders  
are present up there with more soil and  
less slope.

May 15 Same Location. The 47 live traps set in lava  
rock fragments on hills east of camp caught  
1♀, 3♂ Peromyscus eremicus (#178-181 incl) and  
one ♂ Perognathus spinatus #182. Five Schuyler  
traps caught one Neotoma lepida (#177).





Quast  
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Journal

64

May 15 4 miles N of La Paz, Sea Level, Baja California

Minimum Temperature last night was  $63^{\circ}\text{F}$ , maximum today of  $103^{\circ}\text{F}$ . At  $1:30$  this afternoon almost had our two tents carried away by a small whirlwind.

Looked for bats flying near camp from sunset to dark this evening, but saw none.

May 16 Same Location. Minimum temperature last night was  $68^{\circ}\text{F}$ . A strong steady wind started blowing from the south at sunset with clouds in the west, probably accounting for the higher temperature. I have noticed that the nights seem to be coldest in this region when the air is still.

47 live traps set in same region as the night before last yielded 1 ♀ Peromyscus eremicus (#183) and 1 ♂ Perognathus spinatus (#184). The traps ran vertically up the rocky hill east of camp and the two mice were caught about half way up the slope. About four mice were caught by Dr. Benson, Murray, and Tavis together. 4 Schuyler sets caught nothing.

A Frigate Bird and an Osprey were seen at sunset yesterday. American Vultures are common here as elsewhere on the peninsula.

Left this location about 10:00 A.M. for points south of La Paz.





Quast  
1948

Journal

65

May 17 Triunfo, 1700 ft, Baja California  
~~munipio, municipio, municipio~~

Arrived here about 2:00 P.M. yesterday after a very hot drive from La Paz. Crossed the plain south of La Paz in the heat of mid day and noticed many new trees, shrubs, and cactus not seen north of La Paz. Triunfo is what remains of a mining town apparently quite elaborate at one time but now made up to a large extent of ruined buildings. The town is up an arroyo that runs out into the plain.

The group obtained about 70 Tadarida mexicana, several Eptesicus and a Myotis velifer from the supports of the ceiling of a deserted building in the center of town. The bats were hanging between double 2x12 supports in the second floor ceiling. I put up none of the specimens.

Shot two Pipistrellus hesperus last evening at dusk. Noticed that the Pipistrellus came out when the sun had disappeared behind the hill and flew for about half an hour, becoming more scarce the later it got. Saw other, larger, bats flying about 15 minutes after the appearance of the Pipistrellus - probably Eptesicus fuscus and Tadarida mexicana.

One Eptesicus fuscus was shot by Dr. Benson at dark. The larger bats fly quite high when first seen but fly closer to the trees and shrubs on the ground as darkness increases.





Quast  
1948

# Journal

66

May 17 Triunfo 1700 ft, Baja California

Minimum temperature last night was 59°F, maximum today was 97°. It was quite cloudy to the west last evening with a high, thin, overcast today. A breeze from the west arose at about 2 PM.

Our camp is located about 1 mile by road east of the municipal water tank at Triunfo. We are camped beneath a large Mesquite tree in the wash bottom next to what was a cornfield with a brush fence surrounding it.

47 live traps set out last evening around inside of brush fence mentioned above caught 6 ♂ Perognathus spinatus and one ♀, and 1 ♂ and 1 ♀ Perognathus baylei (#187-195 incl.). Fence encloses a sandy field at the bottom of the wash. Field is about 100 yards long and 50 yards wide. The higher parts of the fence are built upon rocky ground, the lower parts in sand. Perognathus spinatus were caught within 20 feet of the rocky portions; one baylei was caught in the center under a bush about 100 feet from rocky ground. Tevis caught 4 Citellus leucurus under bushes within fence near or on rocky ground this afternoon.

Caught one Bufo punctatus (#196) last night at 9:00 PM in rocky area on side hill 100 yds from camp (south) and about 200 yards





Quast  
1948

# Journal

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May 17 Triunfo, 1700 ft, Baja California  
from a small pond further down the wash.

Birds seen here: one large Hawk, Cardinal,  
Plumbeous Gnatcatcher, Cactus Wren, Quail and  
American Vultures. No American Ravens seen  
here so far.

May 18 Same Location. Minimum temperature last night  
was 60°F, maximum this afternoon was 95°F.

47 live traps baited with bird seed and  
set inside same brush fence as described under  
May 17 caught 3♂ Perognathus spinatus (#200, 201 +  
208) and 4 females, and two Peromyscus eremicus  
, 1♂ + 1♀ (#206 + 207). The traps were set in almost  
the same location in the small field as those of  
the previous night, but netted the same number  
of Perognathus spinatus with Peromyscus eremicus  
being caught in addition instead of Perognathus  
baylei.

Shot bats yesterday evening. I shot two  
Pipistrellus hesperus (#197, 198) and one Eptesicus  
fuscus (#199). The others of the group obtained the  
same thing except Dr. Benson who shot a Dasypotis  
ega in addition to the two other species. The  
Pipistrellus appeared at 6:30 P.M., but the larger  
bats obtained were not seen until 7:00 P.M. Due  
to clouds in the west the sunset could not be  
timed in relation to the appearance of the  
Pipistrellus.





Quast  
1948

Journal

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May 18 Trinidad, 1700 ft, Baja California  
~~Trinidad, 1700 ft, Baja California~~

Tewis caught three Neotoma lepida in  
Schuyler traps set along my trap line last night.  
Murray obtained one Caemidophorus tessellatus and  
a Dipsosaurus at noon today.

Birds seen today included a Hooded Oriole,  
California Jay, Phainopepla, Western gnatcatcher,  
Caracara, American Vulture, Quail, and Cactus  
Wren.

Tewis caught one Citellus leucurus this  
afternoon.

8:45 P.M. Bats did not appear until 7 PM  
this evening. Both large and small species  
appeared at the same time. I shot the  
Eptesicus fuscus between 7 and 7:30 P.M. Shot  
a Poorwill at 7:30, mistaking it in the  
dark for a large bat. The sky was clear  
at sunset tonight possibly explaining the  
late appearance of the bats. Murry shot  
one Dasypterus aga and Dr. Benson a  
Periphragus hesperus and Eptesicus fuscus.  
Dr. Benson obtained one Myotis californicus  
from an abandoned mine S.W. of here this  
afternoon.

The Poorwill (#212) was flying about 25 feet  
off the ground. Others were heard calling all evening.

May 19

Same Location. Minimum temperature last night  
was 65°F, maximum today was 94°F.





Quail  
1948

Journal

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May 19 Trunfo, 1700 ft, Baja California

Shot two Citellus leucurus this afternoon at 1:30 in a brush fence 200 yards east of our camp (#215, 216). Also shot one Roadrunner (#214) which was stirring through the leaves and debris under a small tree on a sidehill 300 yards east of here. The Roadrunner had a large Enemidophorus tessellatus (approx 10 in long) in its gizzard.

Lizards are very common here in the late morning (around 11 AM) and mid-afternoon, several Enemidophorus of large size coming into our camp each morning while we are skinning. During the hottest part of the day they are not as common, apparently moving about much less. Other lizards seen here have been Dipsosaurus dorsalis, Lacertinus draconoides, the small Streptosaurus, and Uta and Sceloporus magister. Bufo punctatus are very common in the area about camp in the evenings.

Birds are numerous in this canyon; those seen today: Sila Woodpecker, Western Gnatcatcher, California Jay, Roadrunner, Hooded Oriole, Poorwill, American Raven, American Vulture, White-winged Dove, Mexican Dove, Tantus Hummingbird (?), Caracara, and Quail, Cactus Wren and Phainopepla.

Murray and Tevis went into Town this afternoon and obtained many Tadarida mexicana and Eptesicus fuscus from the same abandoned building visited before.





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# Journal

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May 19 Trunfo, 1700 ft, Baja California

I shot three Eptesicus fuscus this evening. Both the Eptesicus and Pipistrellus began flying about 7:15 P.M. — well after sunset. The day was clear and quite warm, the wind blowing from the east most of the day. Tonight is clear with almost a full moon.

Running down the canyon in which we are camped to the town of Trunfo is a water main containing good spring water which arises about 200 yards up the canyon from us. The ranch 100 yards west of us gets its drinking water from the main and water for irrigation from a well in the canyon bottom. Trunfo has many wells containing water but the inhabitants claim it is unpotable. Despite the arid appearance of the hills there appears to be abundant subsurface water in this region.

It is claimed that the town of Trunfo was wrecked by a wind and rain storm after the departure of most of its inhabitants because of the mining company's failure.

Animals of all kinds are very abundant here. Smelled a skunk last night.

May 20 Same Location. Minimum temperature last night was 64°F. Saw two Brown Towhees yesterday afternoon near brush fence east of camp.





Quast  
1948

# Journal

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May 20 Trinidad, 1500 ft, Baja California

Maximum temperature today was  $95^{\circ}\text{F}$ , but it felt much hotter because of a lazy overcast and apparent high humidity.

Broke camp at 2:30 and departed for San Antonio. Shot a Sila Woodpecker from a Guamouchal tree just east of camp.

May 20 San Antonio, 1500 ft, Baja California

4:30 P.M. Just finished hunting bats in two mines about 2 miles by road towards Trinidad from here. The two mines are visible on the south side of the road just this side of the pass between the two towns. Many Macrotonus californicus were seen, but only three captured. The mines are quite extensive, and appeared to be good place for bats, but only one of them had bat in it, and those just Macrotonus californicus. In the lower mine an open nest of Neotoma lepida was seen. It was about two feet off the floor and built on a flat place in the rocks, appearing like a birds nest made out of a redwood-like bark.

San Antonio is a smaller town than Trinidad, but in a much better condition and looking quite prosperous. A very large mine and associated buildings is visible from the pass, and is about two miles south of this town.

The Gulf of California is visible to the





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May 20 ~~San Antonio, San Antonio, Baja California~~  
east from the ~~pass~~ pass west of town.

Upon leaving town a deserted shack was investigated for bats in the thatched roof. No bats were present, but two Peromyscus eremicus were chased out of the thatched roof into the afternoon sun.

May 20 ~~1 mi E of San Antonio, Baja California~~

Stopped at an old mine by the road. It was composed of a large tunnel entering the hill at road level and a slanting tunnel up from the main one leading outside to an opening about 200 ft higher than the lower tunnel. The mine was found to be full of Macrotus californicus and what Dr. Benson ~~tentatively~~ tentatively called Leptonycteris. I put up five of each type which are entered in the catalog under the above heading and date. About 100 bats of the two types were caught by chasing them into a blind tunnel and then closing the entrance with a large mosquito net. Both types of bats were found to bite, the "Leptonycteris" very viciously. Over half of the bats were dead upon reaching a spot to camp about five miles down the road. They probably died from heat and suffocation—some being packed very tightly in what





Quast  
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May 20 1 mi E of San Antonio, Baja California  
bags we had available at the time. I have noticed that so far it seems as though we have found bats only in caves and mines that are quite open or else ventilated in some way so that a draft can be felt.

None of the female 'Leptonycteris' that I put up had embryos. I noticed that they came in two shades of brown, varying from reddish to dark grey.

The hill in which we found the mine was covered with Palo blanco trees with a few Pitaya dulce and Prickly Pear cactuses growing underneath the trees.

May 21 6 mi ESE San Antonio, 1200 ft, Baja California

Went hunting last night and obtained two Elf Owls between 8:30 and 9:00 P.M. They were located by their calling from the branches of bare trees along the road. A very faint eyeshine was detected in one which was a very light yellow. They seemed to be associated in pairs, for each time I shot I would notice one flying from a nearby tree. Dr. Benson saw one peering out from a small hole in a Cardenas but did not obtain it. I put up one (#235), Dr. Benson the other one. The Elf Owls which were seen were perched on the lower branches of





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May 21 6 mi ESE. San Antonio, 1200 ft, Baja California  
~~minimum, maximum, minimum, maximum~~  
the trees and large bushes — none were  
seen in the tops of trees or bushes.

Many bats were seen flying up and down  
the road at tree level last night. When  
flying up the road they followed it, flying  
in a straight line, but when feeding over  
the trees and bushes, their circling, erratic,  
flight was observed.

Heard the very noisy Gila Woodpeckers all  
morning. The combination of the cooing of the  
White-winged Doves and the loud calling  
of the Gila Woodpeckers made a very noticeable  
clamor from the first sign of dawn to about  
noon.

Maximum Temperature today (1:15 PM.) was  
98°F. ~~The~~ The day was clear with a good  
breeze from the east.

Saw two Cardinals, two Ravens, and  
three Caracara <sup>which were</sup> flying together, the leading  
two of which were fighting in midair.

May 22 Buena Vista, 25<sup>±</sup> ft, 23°35'N, 109°41'W, Baja California  
~~minimum, maximum, minimum, maximum~~

Minimum temp. last night was 69°F, maximum  
today was 90°F. According to the inhabitants  
here there is a very small range of temperatures here,  
it being about like this all summer. The day  
has been perfectly clear with a very slight breeze  
off the bay.





Quast  
1948

# Journal

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May 22 Buena Vista,  $25^{\circ}41'N$ ,  $109^{\circ}41'W$ , Baja California

Visited a mountain full of caves this afternoon. Its name is Cerro Agua Amarga and it lies about 4 miles S.E. of the school. From the school, looking S.E., three mountains are visible, the tallest one being on the right of the other two. The hill containing the caves is the center one. The caves occur in sedimentary strata that run through the hill and their maximum depth probably does not exceed 75 feet. Most of them have wide mouths and are spherical within, the surface of the <sup>rock</sup> being pitted by innumerable concavities about 3 inches wide and as deep. We investigated all the caves we could find on the hill and found bats in only two of them. The first cave containing bats was about half way up the hill on the N.W. side and was about 75 feet deep, two small rooms being present one in back of the other. The ceiling was concave in both rooms and about 10 feet high. The stench of guano greeted our noses the moment we stepped into the cave. About 300 bats were in the cave, all being Macrotes californicus except one 'Leptonycteris' (♀).

The other cave containing bats was near the top of the hill and also on the N.W. side. It was found to contain only Macrotes californicus and none were taken.





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May 22 Buena Vista,  $25^{\circ}41'N$ ,  $109^{\circ}41'W$ , Baja California

The skulls of the Macrolophus taken at the first cave were cataloged by Murray & Tevis; Dr Benson put up the one 'Leptomysterus'.

May 23 Same Location. Minimum temperature last night was  $69^{\circ}F$ . It was a beautiful still moonlit night with a full moon and no clouds in the sky.

50 live traps set along a brush fence 500 yards N.W. of camp and through sandy arroyo bottom caught only two Perognathus spinatus (#238 + 239). The sparsity of the catch I believe to be caused by the brilliant illumination of the full moon last night. Netted two Myotis californicus in a house 30 yards N. of camp, in which people are living in, last night. The bats were caught at dusk and were noted feeding around the mesquite and in the house the night previously. A Peromyscus eremicus lives in the thatched roof.

A Cactus wren has a nest in one of the outer branches of a Palo Verde tree next to camp. There are young for they are heard when the bird arrives with food.

Our camp is situated in a large clump of mesquite and Palo Verde trees about 300 yards north of the school here. We are camped at the west end of the bay, about 25 yards





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May 23 Buena Vista,  $25^{\circ}41'N$ ,  $109^{\circ}41'W$ , Baja California  
from the beach and next to a group of  
houses occupied by fishermen. ~~Who~~ We  
have been obtaining most of our meals at  
the house. 50 yards inland of us a sedimentary  
outcrop is visible and there the mesquite stops  
and the cactus and short bushes take over.  
The sedimentary outcrop is cut by an arroyo  
N.W. of camp which extends several miles  
west to the range of mountains called  
"Sierra Pintá". The mountains are covered with  
Frutia, Creosote, Ironwood, Ocotillo, Cholla,  
and Pitahaya dulce to a moderate degree, my  
being unable to call the vegetation either sparse  
or heavy. Large alluvial fans extend down  
from the mountains and water holes occur  
this time of year only at the heads of the  
arroyos and washes.

Subsurface water is quite available in this  
region numerous wells occurring with windmills  
for pumping the water into tanks. From the hills  
as one looks down upon this area, one is  
impressed by the change in color between those  
areas supplied by subsurface water and  
those not. Almost every wash is very green  
in comparison to the alluvial fans, hills and  
mountains, the color being furnished by the  
green mesquites and Palo Verde.





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May 23 Buena Vista, 25<sup>+</sup> ft, 23°35'N, 109°41'W, Baja California

We were told by a resident of San Jose del Cabo that the farther south from here <sup>that</sup> we go down the peninsula, the greener the landscape will get, and that south of here many tropical fruits such as banana and papaya are grown. He said also that the cape south of here will be cooler.

Watermelons are grown at a ranch about five miles south of here to be shipped to La Paz.

Numerous sharks are visible during the day feeding in the shallow water near the beach. They are small in size (approx. 3 feet), but one about five feet in length was brought in by a fisherman yesterday. Sting-rays occur in the sand in the beach.

Maximum temperature today was 94°F.

Citellus leucurus are common between the sedimentary rock outcrops and the beach, that region also containing many Dipsosaurus, and Calisaurus.

Birds seen today: 1 Pelican, Cactus Wren, Cardinal, Gila Woodpecker, and Mexican Dove.

May 24 Las Cuevas, 23°34'N, 109°39'W, Baja California

Las Cuevas is a small agricultural village about an hour drive S.E. of Buena Vista. The town is composed of about 75 small houses on the west bank of





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May 24 Las Cuevas,  $23^{\circ}34'N$ ,  $109^{\circ}39'W$ , Baja California  
a large arroyo that cuts its way in a northerly direction through a large flat valley. The arroyo walls are about 200 feet high and rise vertically from the sand of the arroyo bottom which is about  $\frac{1}{4}$  mile in width at the town. Caverns occur in the sandstone walls with their floors level with the wash bottom, attesting to their origin by water action during flood time. Three such caves were visited in that region.

The first cave visited was across the arroyo from the town and faced in a south-west direction. An irrigation ditch of small size ran in front of its mouth and numerous large-leaved saplings grew in its entrance. The smell of guano greeted (?) our noses the minute we stepped into the entrance and heard the chittering of bats at the back of the cave. The cave was about eighty feet in depth and about 15 feet wide for most of its length, with the ceiling divided into three concave regions, the innermost being the largest (approx  $10 \times 15$  ft.). Numerous crevices extended back into the rock and many hollows opening downward occurred in the back of the cave. The floor was irregular, being composed of the same black dusty material that we went through at the cave at Mulege. The bats were present by the hundreds, whole areas, some  $5 \times 7$  feet, being covered with a layer of





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May 24 Las Cuevas,  $23^{\circ}34'N$ ,  $109^{\circ}39'W$ , Baja California  
tightly packed, chittering bats. The tightly packed  
bats were clustered on almost vertical side walls  
and were determined to be Myotis velifer while many  
Natalus mexicanus were hanging nearby, mostly  
in the small hollows opening downward from the  
rock. One Natalus mexicanus was seen hanging  
among the Myotis velifer that blanketed some spots  
of the cavern walls, but some of the hollows in  
the rocks contained equal quantities of Myotis and  
Natalis, crowded in together. Some of the openings  
of the hollows were so small that the tightly packed  
bats had to be stirred out with a stick. Several  
Macrotus californicus were seen hanging in the  
highest parts of the cave (about 25 feet). There was  
easily a thousand Myotis velifer within the  
medium-sized cave with perhaps two-hundred  
or less Natalus mexicanus. My estimate on the number  
of Myotis is conservative in comparison to some  
of the other ones.

One part of the floor was covered with a mass  
about 3 feet square of small black beetles. As  
the bats began flying, the chittering increased and  
urine started raining down on our heads. 53 Natalus  
mexicanus were netted and saved and 28 Myotis  
velifer.

The second cave was very spectacular because  
of its large size. Its opening was about 80 ft.





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May 24 ~~Las Cuevas, 23°34'N, 109°39'W, Baja California~~  
wide and the roof over the entrance was about 100 feet above the floor. This cave was about 100 yards south of the first cave and also in the east cliff of the arroyo and also facing south. The roof of the first room was higher than the entrance and domed like that of a cathedral. Wasp nests were just visible on the top of the concave portion. Inwardly the roof dropped sharply to about fifty feet and then gradually towards the end of the cave in two passages. This cave was about 150 feet deep, but the only bats seen were Macrotes californicus which flew from their roost in the roof of inward-most passages out into the high domed portion to circle spectacularly around the dome or to drop back into the inner, lower parts of the cave.

The other <sup>(third)</sup> cave visited was about 300 yards from town and on the west side of the arroyo. It too opened to the south and was high and narrow. Dr. Benson and Tevis investigated it, but found it to contain only Macrotes californicus.

One Black Plover was seen in each of the first two cave entrances.

The main activity of the people of the town is growing vegetables which are irrigated by





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May 24 Las Cuevas,  $23^{\circ}34'N$ ,  $109^{\circ}39'W$ , Baja California  
a small stream of water that is pumped from the well in the arroyo bottom into an irrigation ditch that runs along its east wall in a northerly direction.

May 25 El Carrizalito, 1400 ft, 5 mi N Santiago, Baja California  
Arrived here yesterday afternoon after about a half hour drive from Las Cuevas. This camp is about two miles west of the main road going from Buena Vista to Santiago. The road to Las Cuevas turns off the main road several miles N.W. of here. From here we can look eastward and see the town of Las Cuevas and beyond that to the sea.

We are camped in the unfinished buildings of a tuberculosis sanitarium that was started several years ago and then apparently abandoned. There is a fine spring here in the hill back of us which supports two clumps of palm trees up on the hill. To the eastward the Arroyo de Santiago runs northward to the sea. We are camped beneath the hills delineating the west side of the valley and at a considerable altitude higher than the valley floor.

The hills in back of us are composed of very large granite boulders and are very steep. Palo blanco, Palo verde, Wild fig, Retays dulce and numerous shrubs are crowded





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May 25 El Carrizalito, 1400ft, 5 mi N. Santiago, Baja California  
among the boulders, giving an impression of  
much denser vegetation than that north of here.  
To the east of here Limboi, Mesquite, ironwood,  
and Palo verde form a dense covering to the  
flat valley floor.

Wild life is very plentiful here. Birds heard  
and seen around the buildings were California  
Jay, Mexican Dove, White-winged dove, Cactus  
Wren, American Raven, Sila Woodpecker, and a  
large hawk.

There are two water tanks on the hill about  
75 yards west of camp. Tried Dr. Benson's  
technique of placing fine wires across the sur-  
face of the water, criss-crossed, and about  
two feet apart. Because of the sides of the tanks  
extending above the water surface, the wires  
were about one inch above the water. In  
the tank we worked 3 Eptesicus fuscus and  
one Pipistrellus hesperus hit the wires and  
fell into the water where they were caught.  
Many of the slower flying Pipistrellus and  
possibly some of the larger bats hit the wires  
and water but took off from the surface of  
the tank before they could be caught. Travis  
working with his net over the other tanks  
which is about 100 feet higher up the hill  
caught several Pipistrellus hesperus and Myotis





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May 25 El Carrizalito, 1400 ft, 5 mi N. Santiago, Baja California  
californicus. Murray shot a Dasypus aga  
flying over a small cornfield south of camp at  
dusk last night.

Minimum temperature last night was  $75^{\circ}$ , maximum today was  $92^{\circ}$  F. The temperature at the time of writing is  $85^{\circ}$  (9:00 P.M.)

Put up bats all day and hunted them again tonight. Went down on the roadway which is usually a good place for bats but saw only Pipistrellus hesperus feeding low to the ground up and down the road. Several large bats were seen flying high and towards the arroyo bottom from the hills in back of camp at dusk, but were too high and far away to identify or shoot.

Netted four Antrozous <sup>minor</sup> and one Macrotus californicus in the buildings last night, about 9:PM. They were hanging in ceiling corners when seen by flashlight. The two species were hanging in separate rooms.

Murray caught about 10 Pipistrellus hesperus, several Myotis californicus, and one Eptesicus fuscus and one Lasiurus borealis at late dusk and dark tonight.

Tavis, working with the hand net over the upper tank caught 15 Pipistrellus hesperus, 3 Myotis californicus and 3 Corynorhinus. He caught





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May 25 El Carrizalito, 1400 ft., 5 mi N. Santiago, Baja California  
~~minimum, maximum, minimum, maximum~~  
the *Corynorhinus* within three minutes at late dusk  
and obtained none before or after that time.

May 26 Same Location. 16 ~~live~~ Schuyler traps set  
among large granite boulders, Lumber, Ironwood,  
mesquite, and Pitaya dulce on steep side  
hills caught three *Neotoma lepida*. Three traps  
were set off and pulled the full length of their  
chains with nothing in them. Bait used was  
dried apple and dried peaches. Only *Neotoma*  
*lepida* caught by the rest of the group in  
Schuylers last night.

Minimum temperature last night was 75°;  
maximum today was 90°. The weather has  
been absolutely clear with a warm breeze  
in the afternoon.

Revisited Las Cuevas and its caves this  
morning.

The first cave, described earlier, contained  
an estimated eleven square feet of tightly packed  
*Myotis velifer* this second time. In addition  
to this eleven square feet of *Myotis* roosting  
on the open vertical walls in two places  
(one 3 feet<sup>2</sup>, one 8 feet<sup>2</sup>) many were found in  
deep pockets in the rock. We captured only  
eight *Natalus mexicanus* and noticed that  
they seemed much fewer in number than the  
time previously.





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May 26 El Carrizalito, 1400ft, 5 mi N Santiago, Baja California

Dr. Benson and I re-estimated the dimensions of Cave #1. It was decided that the cave consisted of two rooms and the entrance.

The opening was approx. 15 feet in width and in height. The first room was about 30 feet high and ten feet high, with several concavities in the ceiling about 3' x 5' ending in flat horizontal ceiling. The opening between the first and second rooms was approx. 10' x 10'. The second room was about 20 feet high with an oval depression in the ceiling ending in flat, horizontal sandstone, this depression being about 8 x 15' in dimensions. This cave is about 70 feet long and illuminated clear to the end except for the small side branches containing the bats in depressions and on the flat walls.

Upon entering the cave, the two groups of Myotis started "chittering", but very few flew despite our turning the light of our flashlight upon them. They were in two groups as mentioned before. It was about 10:30 A.M. when we visited that cave. Finally Dr Benson took a long stick and actually had to push the Myotis velifer with it to make them fly. A furrow remained in the group where those touched by the stick had flown.





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May 26 El Carrizalito, 1400 ft, 5 mi N. Santiago, Baja Calif.

The Natalis mexicanus were seen only in the potholes in the beginning and also were stirred from their hiding places with difficulty. After they were frightened out of the potholes, one group by poking them with a bamboo stick, the Natalis flew to the roof of the second room where they hung in groups of about eight. About ten Macrotus californicus were in the roof of room #1 and flew immediately when illuminated by the flashlight.

There were noticeably fewer bats this time than when the cave was visited previously. Numerous cockroaches were seen near the Myotis groups. There were many mud-wasp nests on the cave walls and the nest of one Black Phoebe about 25 feet from the entrance and ten feet off the ground. Of the numerous potholes, the Natalis mexicanus (with a few Myotis velifer) gathered in the most protected and extensive ones.

The second cave visited was a little over 100 yards south of the first one and also called the second cave in the previous description yesterday. Dr. Benson estimated its length as 250 feet with its entrance 80 feet high and wide. It was in three sections; one, the wide mouth about 80' long; two a center, smaller section also about 80'





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May 26 El Carrizalito, 1400 ft 5 mi N. Santiago, Baja California  
long; and, the third section composed of a  
tunnel entering an enlarged section at the  
back. There were several hundred Macrotus  
californicus hanging in the ceiling of the cavity  
in the third section which flew out into the  
first section in a steady stream when disturbed.  
No Macrotus were taken.

About 22 spectators gathered to watch  
the action in the caves.

May 27 <sup>Lane</sup> Location Three. Roadrunners and many Calisaurus  
and Dipsosaurus were seen along the road  
yesterday. Saw a large Cnemidophorus in  
the bush east of camp yesterday.

Hunted bats yesterday at dusk and dark.  
Shot one Myotis californicus at 7:15 flying along  
a brush fence. Netted two Pipistrellus hesperus  
over the lower water tank after dark. Dr. Benson  
netted one Corynorhinus there among other bats.

The bats were noticeably fewer last night,  
the population possibly being taken down by  
the fairly large numbers of bats taken there on  
previous nights by the group.

Species of bats taken at this location to  
date have been: Macrotus californicus, Myotis calif-  
ornicus, Myotis volans, Myotis velifer, Eptesicus fuscus,  
Pipistrellus hesperus, Lasiurus, Dasypterus ega,  
Antrozous minor, and Corynorhinus.





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May 27 ~~El Carrizalito, 1400 ft, 5 mi N. Santiago, Baja California~~  
Minimum temperature last night was  $74^{\circ}\text{F}$ , maximum today was  $87^{\circ}$ .

May 28 <sup>Same</sup> Location Minimum temperature last night was  $70^{\circ}\text{F}$ . The valley below us this morning was filled with fog, but the mountains in back of camp were clear of fog by daylight and brilliantly illuminated by the sun.

For some reason unknown to us, the bats were very common around the water tanks last night. I netted eight female Pipistrellus hesperus between 7:30 and 9 P.M. that were flying over the upper water tanks. Tevis netted four female Pipistrellus hesperus, one Myotis californicus and one Corynorhinus at the same place and time, he working on the side of the tank opposite to mine. Murray netted several Myotis californicus and Pipistrellus hesperus in the same time interval at the lower tank.

Dr. Benson netted 5 ♂ and two female Antrozous minor in the buildings last night. We visited a pool high on the hill last night at 9:30 P.M. It was circular and about 20 feet in diameter and entirely surrounded by Palm trees. Dr. Benson said that he saw a bat (Lasiurus - Lasiopterus?) leave one of the palms at dusk.





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## Journal

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May 28 El Carrizalito, 1400 ft, 5 mi N. Santiago, Baja California  
Visited a so-called "cave" about a mile north of here this morning. Found nothing under the huge boulder with a space underneath that we were led to except a tibia and remnants of a human spinal column.

A different type of Ocotillo grows here. It is in the form of a tree about 15 feet high and has large red blossoms. Wild fig trees are common near water sources, the ponds and springs being marked with tall palm trees. Guamouchal trees and large Mesquite trees also seem to grow in the vicinity of subsurface water. A few Mango trees are found near ranches and places of habitation. In the flat below the canyon mouths the Ocotillo, Limboi, Ironwood, Palo Blanco, Palo Verde, Pitaya Dulce, Cardone and Mesquite grows. Small bits of grass are visible in the area, but the whole region is very heavily grazed by cattle and goats.

According to the local inhabitants, deer can be found in the mountains just west of here. Skunk and Bassariscus are also said to be common.

Maximum temperature today was 87°F.

Birds seen today: Gila Woodpecker, Cardinal, California Jay, American Raven, Buzzard, Coracara,



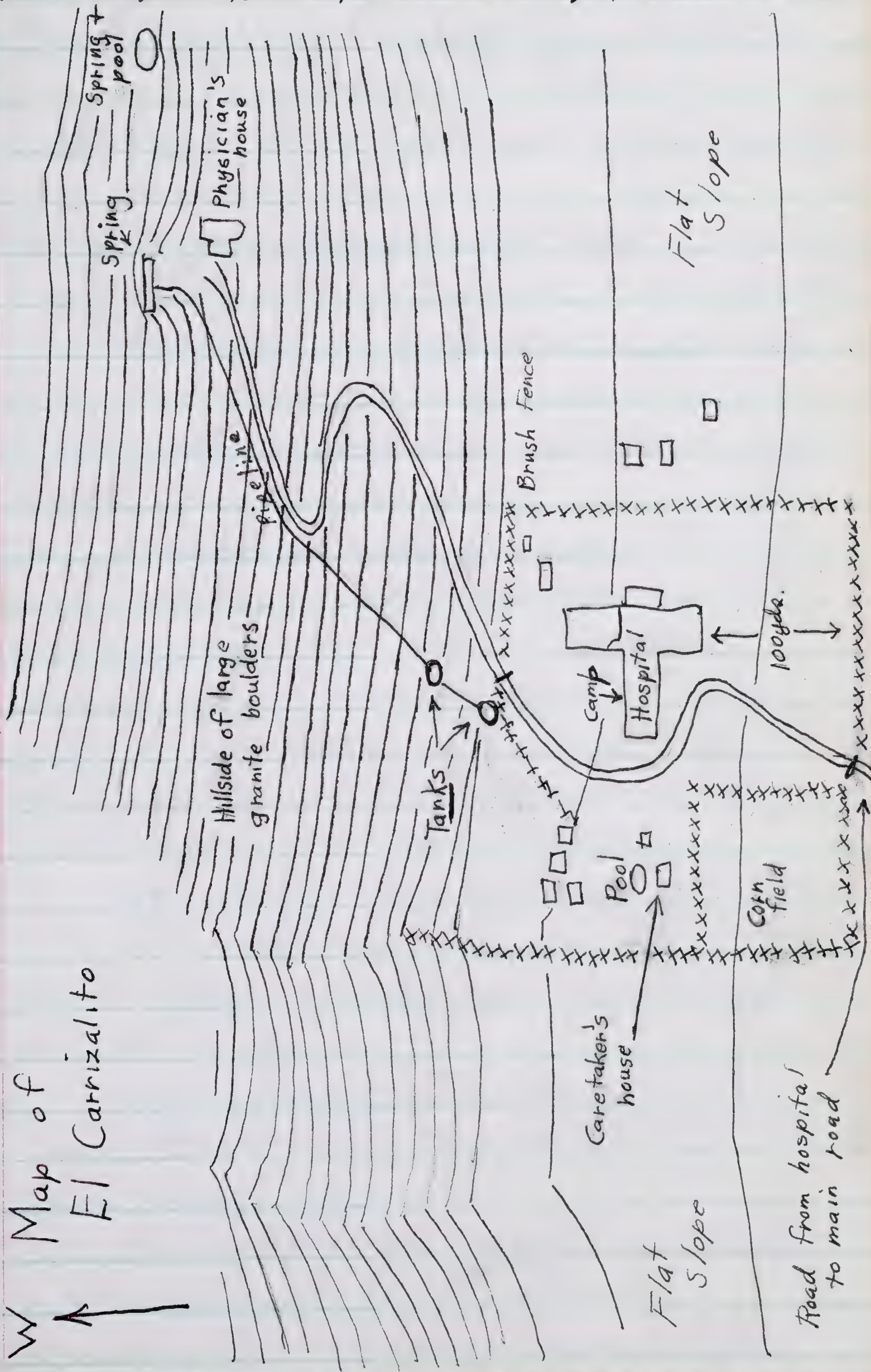


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May 28 El Carrizalito, 1400 ft, 5 mi N. Santiago, Baja California.







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May 28 El Carrizalito, 1400 ft, 5 mi N. Santiago, Baja California  
Mexican Dove, White-winged Dove. The tanks  
and pool by the caretaker's house contain  
Bufo punctatus; the pool north of the physician's  
house contains Hyla.

May 29 <sup>Lam.</sup> Location Minimum temperature last night was 72° F.  
The valley was filled with fog at 6:30 this morning.

Texas caught an Antrozous minor over the  
water tanks (upper one) last night and Dr.  
Benson netted a Desopternus ega over the pond  
by the caretaker's house.

I netted one Antrozous minor in the  
ceiling of the two story stair-well of this  
building last night, shot a Pipistrellus  
hesperus over the cornfield at dusk, and  
netted a Pipistrellus hesperus and a Myotis  
californicus over the caretaker's pool last  
night between 7:30 and 9:00 P.M.

Bats started flying last night at 7:45  
P.M., the Pipistrellus being seen at that time  
feeding among the rocks and trees well up  
the mountain slope.

Saw a flock of Quail and a Plumbeous  
Gnatcatcher this morning in the flat area  
below the hill.

May 30 El Chorro 800<sup>+</sup> ft, 2 mi W. Agua Caliente, Cape District, Baja California

Arrived here about 5: P.M. <sup>yesterday</sup> after an approx 1½  
hours drive from our previous camp over a good





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May 30 ~~El Chorro, 800<sup>+</sup> ft, 2 mi W. Agua Caliente, Cape District, Baja Calif.~~  
road. Santiago and Agua Caliente lie in a broad, flat wash-bottom east of very tall and rough-looking mountains. The area looks rich and wealthy from the agricultural standpoint, judging from similar areas seen in the north. Water for irrigation is available, but apparently in limited quantities at this time of year.

We are camped at the place where the stream bed passing Agua Caliente and Santiago meets the mountains to their west. The canyon mouth is about 50 yards west of camp at which a small concrete irrigation dam is built about 75 feet wide and 15 feet high. A concrete irrigation ditch leads from the north side of the dam down the north side of the broadening canyon towards Agua Caliente.

Numerous hot springs occur in the immediate vicinity of the dam, but the water issuing forth is warm and not hot. The water for irrigation above the dam appears to arise within a distance of 100 yards from the dam.

The canyon walls are steep and the canyon narrow and filled with small granite boulders. Growing on the hills are mostly Palo blanco and Cardon Pitiaya dulce, with a few Mesquites and Palo Verde in the wash area (arroyo de? large). Tules and small thorny bushes grow





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# Journal

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May 30 El Chono, 800<sup>+</sup> ft, 2 mi W. Agua Caliente, Cape District, Baja Calif.  
around the pond at the dam. The wash area and canyon walls are grazed by cattle.

Shot bats last night here at dusk. All obtained was two female Dasypterus ega. Dr. Benson shot 2 Tadarida mexicana, 4 Tadarida femorosacca and two Dasypterus ega. Tervis and Murray got 4 Dasypterus ega and one Pipistrellus hesperus.

The first bats seen were the small Pipistrellus hesperus, followed immediately by the larger forms. All were flying east and by the hundreds, it looking like a mass bat migration for a period of a half hour. At first all were flying high, even the Pipistrellus appearing to be out of gunshot range, but before dark they began to fly much lower, especially within the canyon. The Tadarida femorosacca were easily distinguished by their rapid flight, large size, and long narrow wings. The Dasypterus ega, also of large size, had much broader wings and flew much slower, and with far less wingbeats per second. The large Tadarida were hard to hit and stop with no. 10's in the 16 ga shotgun, a very large number of shells being expended for the number of bats obtained.

A Least Grebe was seen in the pond above the dam yesterday afternoon.





Quast  
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# Journal

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May 30 El Chono, 800<sup>+</sup> ft, 2 mi W. Agua Caliente, Cape District, Baja Calif.

Minimum temperature last night was 70°F. Temperature at 10:00 A.M. today is 86°.

The pond above the dam is about 60 yards long and about 25 yards at its widest point. Tried catching bats last night from 8 to 10 P.M. by stringing two fine wires across a section of the pool. Only one bat was trapped, but it swam to the other side of the pond and was lost. It looked very much like a Dasypterus, and hit the wire at ~~8~~ 9:30 P.M.

Many White-winged Doves come to the water to drink. Saw a Yellow Throat and several California Jays also. Two or three Black Phoebe's seen along water's edge, perched on rocks and flying about concrete dam.

Maximum temperature today was 95°F.

May 31 <sup>Same</sup> ~~location~~ Minimum temperature last night was 68°F, Temp. at 12:30 today was 94°F.

Shot bats last night at dusk at pool at dam by camp. Bats appeared at 6:45 P.M. and all were flying high up the canyon walls, including the Pipistrellus, when first seen. As it got darker, more appeared, and they began flying lower. Shot 4 ♀ Dasypterus ega (#279-282 incl), 34 Tadarida femorosa, (#283-286 incl.) and one Tadarida mexicana #287. Others of the group obtained the same species.

Black Phoebe's and many Canyon wrens seen





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# Journal

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May 31 El Chorro, 800<sup>±</sup> ft, 2 mi W. Agua Caliente, Cape District, Baja Calif.  
up the canyon yesterday.

Broke camp at 1:30 and departed for Santa Anita.

June 1 Santa Anita, 250<sup>±</sup> ft, Cape District, Baja California

Arrived here about 4 P.M. yesterday. Heard that there were bats in one of the unoccupied houses at this place so we investigated and found one Macrotus californicus and about 100 Myotis velifer. The Myotis were clustered in a corner of the ceiling over a hole leading into the thick adobe walls. Several were taken by Dr. Benson, of which I took and put up one. In another room a single Macrotus californicus was seen.

Investigated a bat cave about  $\frac{3}{4}$  mile S.E. of this place this morning. Found it to be a narrow hole in a granite cliff face about 75 feet long and wide enough and high enough to accommodate a crawling man. The cave contained only Macrotus californicus of about 20 in number of both sexes.

Minimum temperature last night was 64°F.

June 2 6 mi N. San Jose del Cabo, 250<sup>±</sup> ft, Baja California

Minimum temperature last night was 65°F.

We are camped about two miles S.E. of Santa Anita in an arroyo bottom. We are surrounded by scattered palm trees, mesquite, and Guamouchal trees.





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June 2 6 mi N. San Jose del Cabo, 250<sup>+</sup> ft, Baja California

Maximum temp today was 88°F.

Shot bats last night at dusk and obtained three Dasyspermus eggs, 1♂, 2♀. Found that the Dasyspermus hid in the dry fronds of palm trees in vicinity, Murray seeing one alight there last night and shooting it afterwards, and Dr. Benson chasing them out of palm trees at 9 this morning by probing the fronds with a long stick (several of these obtained).

Citellus leucurus are very plentiful in a turnpuckley pear patch 100 yards south of camp. Shot a Lepus californicus there at noon today. (#295).

Dr. Benson obtained a number of Balantiopteryx plicata this afternoon from a cave several miles from here. Tevis caught a large rattlesnake on the flat west of here this evening.

Water may be found in a ditch 100 yds S.W. of here. The ditch is dug in a stream bottom to a depth of about two feet and contains water for over 50 yards. The water is clear and about one inch deep. Dr. Benson sat by the ditch last night for an hour after dark but obtained only one Dasyspermus eggs that was not drinking, but flying over his head.

Birds seen today: Thrasher, Sparrow Hawk, Quail, Hooded + Scott Oriole, Caracara, American Raven, Turkey Vulture, Gila Woodpecker, Cactus





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June 2 6 mi N. San Jose del Cabo, 250<sup>+</sup> ft, Baja California  
Wren and Cardinal.

Lloyd Tevis caught two Phylodactylus unctus in a cave 100 yds south of here at 8 tonight.

The Dasypterus began flying at 6:45 this evening (sunset) and again fifteen minutes before the small bats appeared. No Tadarida femorosacca have been seen here at dusk despite the fact that they were seen at Santa Anita which is less than two miles west of here. Perhaps this arroyo is not suited to them, or else we are camped just out of their range from the mountains to the west.

The nights have been cool and pleasant and the days not excessively warm. The air is quite damp at night and the last two mornings have had fog west of here, near the mountains.

June 3 <sup>Same</sup> Location Minimum temperature last night was 66°F, maximum today 91°F.

48 live traps set along area where hillside south of camp meets sandy wash below, caught 2♂, 2♀ Perognathus spinatus (#306-309 incl). No other traps were disturbed. Tevis caught a Urocyon last night in place where stream bed meets wash south of camp.

Saw several California jays today.

Set out 10 Schuyler traps through wash and along hillside south of camp tonight.





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June 3 6 mi N. San Jose del Cabo, 250<sup>+</sup> ft, Baja California

Murray caught several Eophera today in a cornfield 200 yds N.E. of here.

The humidity is very high here, especially at night. Fog was present to the west this morning, clearing about 9 A.M. Pleasant day today with a nice breeze. Clouds tonight high in the north with a slight north breeze and noticeable dampness in the air.

Murray caught one Dipodomys merriami in his live traps last night and several Perognathus spinatus.

June 4 <sup>Same</sup> Location. Minimum last night was 67°F.

10 Schuyler traps set along rocky hillside 200 yds south of camp and in wash below caught 2♀ Neotoma lepida (#310 + 311). None other of the Schuyler traps were disturbed.

Dr. Benson, Tevis + Murray investigated bats that had been seen flying into a crevice earlier this morning. They found <sup>weeper</sup> one Tadarida ferox and many Myotis wedged in under exfoliating layers of a large granite boulder. Location was 200 yds south of camp in rocky hillside with granite outcrops.

June 4 San Jose del Cabo, Baja California

Observed bats that looked like Tadarida mexicana leave a tin sign that





Quast  
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# Journal

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June 4 ~~San Jose del Cabo, Baja California~~  
was fastened against a stuccoed wall  
at 7 tonight. Bats were between sign  
and wall and about 50 left at  
exactly 7:00 P.M. with others following  
in twos and threes about five minutes  
apart for the following half hour.

Bats are varied and numerous in the  
town at dusk, all sizes being seen  
flying overhead. Boys brought Dr.  
Benson 3 Myotis velifer they caught by  
hand.

The air is very humid at 9:30 Tonight  
and has been since this afternoon. Palm  
trees abound in and around town and  
extensive agriculture with irrigation is  
carried on in the wash north of town.

June 5 <sup>Same</sup> Location 6:25 A.M. Seated once again in the cafe waiting  
for breakfast to be served. Slept north of town  
last night and took no minimum temperature  
reading. It rained this morning about 4 AM and  
at present there are many clouds in the sky. The  
humidity is very high this morning.

June 5 ~~El Tule, 25<sup>+</sup> ft, Baja California~~

El Tule is a ranch on the road between San Jose  
del Cabo, and San Lucas, about halfway between  
the two. Several miles back towards San Jose del  
Cabo we investigated a bat cave about  $\frac{1}{2}$  mile





Quast  
1948

Journal

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June 5 El Tule, 25<sup>+</sup> ft, Baja California  
~~minimum, minimum, minimum~~  
off the highway, towards the ocean and procured  
4 Balantiopteryx plicata (see species account). Dr.  
Benson saw one Lepus californicus on the road and  
shot it. Also seen in a sandy wash was one  
Citellus leucurus.

The terrain between here and San Jose del Cabo  
is noticeably different than north of that place. We  
have entered a section of low rolling hills with  
numerous washes between composed of what  
appears to be decomposed granite. The hills  
have a red texture to them while the washes are  
white with the minutely fractured granite gravel.

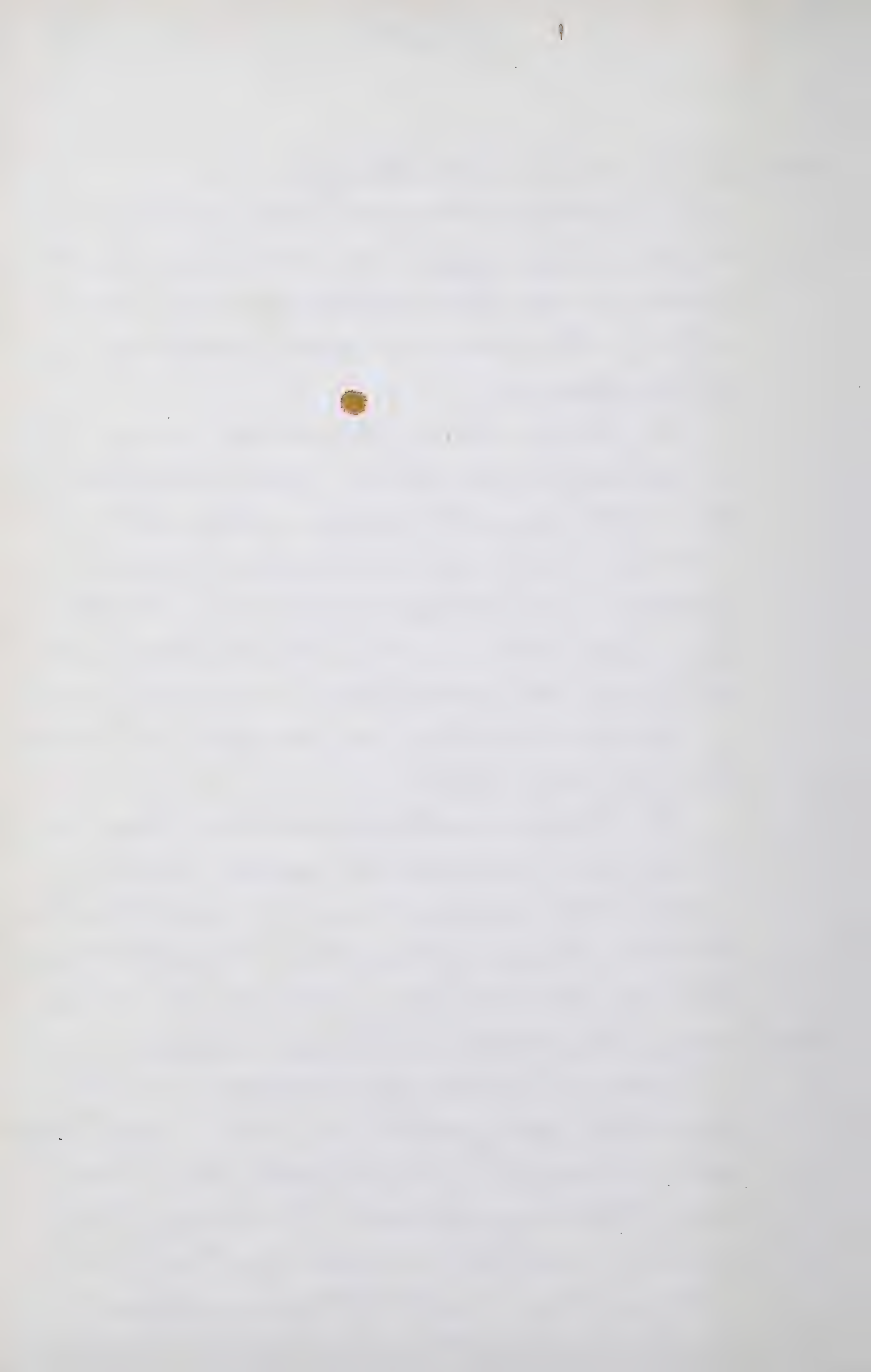
Towards the interior the mountains rise abruptly  
from the coast hills.

The hills are vegetated with low brush and  
Pitaya agria and barrel cactus, with the  
washes containing much more dense vegetation. Sombra  
Acotillo, Cardon, Pitaya dulce, Palo Blanco and  
Cholla are some of the many plants in the washes.

June 6 1 mi N Cabo San Lucas, 20<sup>+</sup> ft, Baja California  
~~minimum, minimum, minimum~~

Minimum temperature last night was 53°F. It  
looked like rain yesterday at dusk, a dark, heavy  
overcast moving in from the south, but no rain  
was noted during the night. This morning the sky  
is clear except for a very few, scattered clouds.

We are camped east of the town on the road  
to San Jose del Cabo. Surrounding us are fields





Quast  
1948

Journal

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June 6 Lower N. Cabo San Lucas, 20<sup>+</sup> ft, Baja California  
and the sandy wash of the large arroyo that runs past the town from the north. South of us is a cornfield and then a beach, north of us, an empty cleared field. Between our camp and the town is about a mile of sandy wash of coarse granite gravel overgrown with "Romerillo?" — a very small-leaved bush growing about 4 feet high. The hills are about 2 miles to our east.

Shot bats last night at dusk and obtained 3 Tadarida femorosacca (#313, 314, 315) [see species account]. Others of the group obtained Balaniopterus plicatus and Pipistrellus hesperus. These species were shot between 6:45 and 7:30 P.M.

Lepus californicus are common here, there being seen about 100 yds east of camp.

Birds seen this morning: Killdeer, Flicker, Cactus Wren, Ash-throated flycatcher, Hooded Oriole, Cardinal, Caracara, Buzzard, Raven.

Cabo San Lucas is a fishing village built almost entirely of wooden houses. A cannery is located on the beach south of town and at present is processing tuna. Several large American fishing boats are operating from here. Fish are very abundant around the pier at the cannery, thousands being seen in large schools evidently feeding on cannery waste. The fish are so thick that they look like huge patches of seaweed from the





Quast  
1948

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June 6

1 mi N. Cabo San Lucas, 20<sup>+</sup> ft. Baja California  
bottom of the bay to the surface. Those of the  
schools are about 6 in long, but Calubillo are  
caught off the pier that weigh from 4-8 lbs.

June 7

Punta Gasparino 10<sup>+</sup> ft 23°16'N, 110°9'W, Baja California

Arrived here yesterday after a hard but interesting  
trip from Cabo San Lucas. This road seems to be  
travelled much less than that on the east side of the  
cape and leads over considerably rougher terrain,  
climbing high into the mountains between here and  
Cabo San Lucas. The vegetation is of the same  
kind as in the southern part of the peninsula  
but grows high and heavy from the mountains  
to here. We are still in the weathered granite  
country and see occasional granite outcrops  
in the form of large boulders. Considerable  
more soil is present in this area.

Minimum temperature last night was 63°, max-  
imum today was 77°.

We are camped in a large wash just north of  
Punta Gasparino and are about 200 yds from the  
ocean, separated from it by a large level beach.  
South of us are small sand dunes thickly over-  
grown with short dense shrubs and composed of  
very fine, dark sand. North of us and ~~west~~ of  
east of us is the wash bottom that points toward  
the sea from the mountains several miles to the east.

Saw two large Iguanas yesterday that were





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June 7 Punta Gasparino, 10<sup>+</sup> ft, 23°16'N, 110°9'W, Baja California  
sitting on large granite boulders well in from  
the sea - neither were obtained.

Saw a rattlesnake last evening while setting  
traps but was unable to procure it. Dr. Benson  
shot one this morning.

June 8 <sup>Same</sup> Location. Minimum temperature last night was 63°F.  
Temperature at 11:30 AM. is 74°F.

48 live traps set last night in dark sand dunes  
south of camp (same location as previous night) caught  
7♂, 6♀ Perognathus arenarius (#325-337 incl).

Dr. Benson, Murray, and Lewis spent last night  
at a ranch near here at which open water is  
found. They netted and shot some Pipistrellus and  
Natalis mexicanus. Their live traps set on the  
rocky slopes caught Perognathus spinatus and one  
immature Peromyscus eremicus.

The weather has been very pleasant here with clear  
sunny days and a cool breeze off the ocean. Went  
fishing in the surf the evening before last and  
caught one small and one large fish, the latter  
of which we had for breakfast the following morning.  
Dug some small crabs out of the sand and used  
them for catching the smallest fishes, using it  
in turn for bait for the larger ones. Went fishing  
again last evening but caught nothing, the surf  
being so rough that the 7 lb weight wouldn't  
hold the line out.





Quast  
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# Journal

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June 8 Punta Gasparino 10<sup>+</sup> ft 23°16'N, 110°9'W, Baja California

Very few bats seen here at dusk the last two nights. Saw one this morning at 5:30 flying very fast among bushes in wash.

Birds seen here: California Jay, Brown Towhee, Pelican, Cormorant, ~~California~~ Raven, Buzzard + Caracara.

June 9 San Juan de la Barradera 1600 ft W. base Sierra Laguna Baja Calif.

Arrived here yesterday about 9 P.M. after an easy trip from Punta Gasparino. The road becomes good from El Pescadero on to Todos Santos.

Sugar cane was being harvested and squeezed at El Pescadero when we passed through and I got the impression of abundant water being present there, large fields of sugar cane and corn being passed, attesting to a large quantity of irrigation being carried on.

Todos Santos is a pleasant town about the size of Trunfo, and is located by large fields of sugar cane and corn. Saw the first gas station here south of La Paz. The ocean and beach is visible from the town.

We are camped very high up the Arroyo de la Barradera in preparation for a pack trip into La Laguna. NNE of us rises the rocky prominence near La Laguna and is visible from here as well as Todos Santos. The charge for the trip is said to be four pesos per day per animal with





Quast  
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Journal

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June 9 ~~San Juan de la Herradura, 1600 ft. W. base Sierra Laguna, Baja Calif~~  
the necessity of feeding our guide at our own expense for the trip. We are well into the foothill of the Victoria mountain and steep canyon wall rise around us.

The canyon slopes are composed mainly of large granite boulders and dark brown soil.

Minimum temperature last night was  $69^{\circ}\text{F}$ , maximum today was  $98^{\circ}$ .

June 10 <sup>Same</sup> Location. Minimum temperature last night was  $68^{\circ}\text{F}$

Went hunting yesterday afternoon but saw only one Citellus leucurus and one Uta Thalassina. Obtained the squirrel, but was unable to get the Uta. The arroyo is very dry here and game appears to be very scarce. Just above our camp the sandy wash changes to a narrow, steep-walled canyon with vertical rock walls rising vertically on each side of it. This canyon is also bone-dry, the people living here getting their water at quite a distance and from a spring high upon a hill.

Shot bats last night and obtained one Pipistrellus hesperus and two Eptesicus fuscus (#339, 340 + 341). The Pipistrellus bats did not appear until 7:15 and the Eptesicus until 7:30 P.M. Others of the group obtained more Eptesicus and some very dark ones were noticed among those of this species obtained.





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June 10 San Juan de la Ferradera, 1600 ft. W. base Sierra Laguna, Baja Calif. The large Enemidophorus lizards are common in the wash area and Calisaurus also. The Uta stansburiana was the only lizard seen in a short walk above the wash through the rocky canyon at its head.

A large group of small bats feeds about the porch and associated buildings of the people living here. Dr. Benson tried to net several that were hanging in a shack nearby at 7:30 PM yesterday but they escaped through large holes in the walls.

The large Pitaya (dulse?) is bearing fruit and several people were seen knocking off the fruiting bodies presumably for eating. The fruit is the size of a large apple and covered with dense yellow spines about an inch long. The meat is of a deep red color.

The vegetation on the hills can hardly be called vegetation at all. All except the locally called "skunk-tree," which now is bearing yellow blossoms only, is entirely without leaves and appears to be dead. Nothing meets the eye on gazing at the hills except the yellow blossoms of the before-mentioned tree, the Pitaya, and the leafless brown trunks and branches of the arid-adapted bushes and trees. One exception I forgot to mention was a few





Quast  
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June 10 San Juan de la Sierra, 1600 ft., W base Sierra Laguna, Baja Calif.  
wild fig and oak trees bearing leaves. The wild figs are ripe now.

The local occupation seems to be mule raising coupled with wood-cutting. The country is evidently overgrazed for the mules also, judging from the nonchalance in their eating dried pieces of wood from a wood-pile nearby. Most of the wood cutting seems to take place in the area of La Laguna in which the Oak and Madroño trees are found.

Note: The four Vta thalassina listed under this date in catalog were obtained June 11. #343-346 incl.

June 11 La Laguna, 6200<sup>±</sup> ft., Sierra de la Laguna, Baja California

Arrived here yesterday about 5 P.M. after a pack trip lasting 7 hours from previous camp.

Minimum temperature last night was 51°, maximum today was 79°. Last night and today were clear with a good breeze coming up in the afternoon from the west.

La Laguna valley is about one mile long measuring from the slopes of the basin and about  $\frac{1}{3}$  mile wide. Most of the bottom of the basin  $\frac{2}{3}$  mile  $\times$  1,000 yds is composed of the remains of the lake bottom that once existed here, and is marked by fairly level grassy soil with several gullies or stream beds running through it. The valley runs in an approx. E-W direction, the stream flowing from the SW end to the eastern end where it exits in a northerly

[See map pg. 117]





Quast  
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June 11 La Laguna, 6200<sup>+</sup> ft, Sierra de la Laguna, Baja California  
direction in a canyon. Water exists at this time in  
the S.W. corner in the form of several pools about 4 ft.  
in diameter; in the center where a stream begins and  
flows almost to the exit where it goes underground  
to emerge again in the canyon exit, and in  
two springs found in the southern side of the  
east portion of the valley, both of which form streams  
for but a short distance.

The soil on the hills is of a granite base and  
granite boulders of large dimensions are visible  
all around us and several also in the valley  
floor.

The hills are covered with a forest of Oak,  
Pinyon pine, and Madrone Trees which grow down  
to the one-time meadow of this shallow-basin  
floor. Very little leaf debris has accumulated  
beneath the trees, the bare soil present in most  
of the places. Numerous cycads (?) are spotted  
through the forest and some pockly pear and also  
one palm tree was found in the forest.

The grass on the basin floor is definitely over-  
grazed and in spots no grass at all is to be  
found. The soil appears to be eroding rapidly  
as the result of overgrazing and it will take  
but a few years to remove most of that remaining.

Around the few pools found here and along the  
stream in the center and at the exit small, heavy





Quast  
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## Journal

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June 11 La Laguna, 6200<sup>+</sup>ft, Sierra de la Laguna, Baja California  
leafed water plants form a veritable mattress.

The trip up here from San Juan de la Barranca yesterday was one requiring a considerable amount of exertion and a considerable reserve of perspiration. For six hours the four of us and three Mexicans pushed the horses and mules up the steep slopes, the trail tacking back and forth over the canyon faces. Not one piece of ground was encountered between the arroyo bottom and here that was not cocked at an angle, and usually a steep one. The mounts were not in good condition and we all had to take turns at leading them between rides. Only one very small spring was encountered on the trail, that being ~~the~~ very deep in a small hole and muddy. We drank some of the water nevertheless.

As we ascended the mountains from the arroyo bottom it was noticed that the leafless trees became larger and taller. Several new trees were seen that we had not experienced before, one of which was blooming white, characteristically, lacking leaves. Several very large wild-fig trees were seen, one of which contained about a dozen white-winged doves which were probably feeding on the ripening fruit. Cardones with blunt white spines were fairly common, and a few of the Organ-pipe cactus were seen. As we ascended





Quast  
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# Journal

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June 11 La Laguna, 6200<sup>+</sup> ft, Sierra de la Laguna, Baja California  
still further up the steep slopes, the trees suddenly  
became shorter and more sparse, but oak trees  
became visible although those seen on all but  
the top slopes of the mountains appeared dead  
and clothed in masses of yellow, dried, leaves.

Palm trees were seen in a deep canyon to our right  
when we were nearing the summit and as we neared  
the top green oaks and Pinon pine were seen. We  
crossed over into La Laguna through a large and  
prominent saddle in the crest of the mountains —  
a break visible from parts close to the arroyo and  
possibly visible from the valley floor south of  
Todos Santos. Just over the crest, all is different  
and very similar to forested sections of Upper  
Sonoran parts of Alta California.

Shot bats last night and obtained one Eptesicus  
fuscus. The bats did not appear until about  
7:15 P.M. and were first seen feeding over the  
oak and madrone trees of the wooded sections.  
Later they began to feed among them and around  
their edges where the forest meets the flat. At  
dark the bats were seen feeding over the flat.  
Three sizes were seen, small, medium, and  
large, the smallest probably being Pipistrellus  
hispens or Myotis californicus, the larger  
ascertained to be Eptesicus fuscus. Dr. Benson  
obtained one Myotis californicus last night.





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June 11 La Laguna, 6200<sup>±</sup> ft, Sierra de la Laguna, Baja California

Murray caught one Sorex ornatus lagunae last night in a Museum special mouse trap baited with walnut and set in a bank along side of stream near camp

Fifty Museum special mouse traps baited with walnut and set along running water in center of field caught nothing and no traps were disturbed. Traps were set in stream bed usually on damp ground within two feet of the running water. No appreciable cover was found along the stream bank, that ~~the~~ existing being formed by a few large-leaved composite plants.

Shot four Uta thalassina (<sup>#</sup>343-346 incl) this afternoon. They were found on large granite boulders in canyon wall at stream exit at east end of La Laguna. Most of these lizards were seen in the rocks at the end of the flat, and none in the canyon proper. One was seen in isolated granite boulders in center of eastern portion of La Laguna.

Willows grow in several small patches along the two streams (springs) in the southern side of the eastern portion and in the canyon exit in the east. The canyon exit contains the largest amount of running water in the area and the stream flows over small falls and into pools for at least 300 yds down the canyon. Willows grow in patches through the canyon at the edge

[See map pg. 117]





Quast  
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June 11 La Laguna, 6200<sup>+</sup> ft, Sierra de la Laguna, Baja California  
of the pools and among the large granite boulders.  
Quite a bit of grass grows along the stream  
and numerous composite plants, and one patch  
of Maiden-hair fern was seen. Very little  
leaf mould in this area.

Set 50 Museum Special traps baited with walnut  
this evening among willows in canyon exit.

June 12 <sup>Same</sup> Location Minimum temperature last night was 55°F.

Shot bats last evening at dusk and obtained  
one Myotis fuscus. Others obtained Tadarida  
 mexicana, Desmodus egg, and Pipistrellus hesperus  
in addition. Bats did not appear until about 7:30  
P.M. and were first seen feeding around and over  
the wooded hill. It was not until later that they  
descended to feed around the edge of and <sup>over</sup> the  
flat.

49 traps set last evening in willows in canyon  
exit caught two Peromyscus eremicus and two  
Peromyscus truei. One trap was missing, the string  
only remaining, and was probably chewed loose  
from its tie-cord by a trapped Neotoma. Two, trap-  
ping further down the canyon caught the same  
species.

Three additional Mexicans appeared last night  
and stayed for dinner and breakfast this morn-  
ing. All carried rifles and were presumably  
hunting for deer although the season is closed





Quast  
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June 12 La Laguna, 6200<sup>+</sup> ft, Sierra de la Laguna, Baja California  
at this time. One told us that each family  
gets an average of two ~~year~~ deer per month  
throughout the year from this region.

Was told today that it snows occasionally here.  
The time of snowfall is usually in February, and  
very little at a time, it usually snowing at night  
and all melting the following day.

Dr. Benson caught one of the Mexican's dogs  
in a steel set last night. The dog started howling  
at 11:00 P.M. and was subsequently released.  
Despite the spindly condition of the small dog  
it suffered no more than a very slightly lacerated  
foreleg and was perfectly normal this morning.

Neotoma lepida are common here being caught  
in prickly pear patches in the flat and along  
the stream near camp.

Tavis caught an Alligator lizard along  
the banks of canyon exit stream yesterday.

I have seen the following birds to date:

Plumbeous grnatcatcher feeding in oak trees  
on north side of La Laguna.

Bush-tit - common in oaks and willows - very  
tame.

California Woodpecker - several seen in dead  
pine tree near stream exit.

Junco - very common - seen mostly feeding  
in and around sparse composite plants in





Quast  
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June 12 La Laguna, 6200<sup>+</sup> ft, Sierra de la Laguna, Baja California  
the flat and in and under oaks and pine trees  
at periphery of flat. These birds are very tame  
and can usually be approached to about 10 feet.  
Several come into camp and scratch in the leaf  
debris 4 feet from myself and a sleeping dog.

Robin - very common in trees bordering field and  
especially in trees and willows along stream.

Solitary vireo - one seen in Madrone trees over camp.

Raven - several seen.

Plain titmouse - tame and inquisitive - several seen  
in willows along exit stream.

Red-tailed hawk - probably one individual seen  
several times flying over flat.

Mourning dove - several seen in flat.

Band-tailed Pigeon - common here, especially  
in trees near water. Several flocks of about 10 seen  
flying among oaks on sea-side of ridge.

Olive-green Swallow - a few individuals seen in  
late afternoon around pools in flat and at  
dusk over pools and feeding just before bat-time  
over oak forest.

Killdeer - three or four in flat among sparse  
composite plants by camp. Also seen tame, making  
a lot of noise when approached and continuing  
to do so while keeping about 10 yards ahead of  
the walker.

Black Phoebe - one seen flying about stream





Quast  
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## Journal

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June 12 La Laguna, 6200<sup>+</sup> ft., Sierra de la Laguna, Baja California  
as it leaves the flat.

Maximum Temperature today was 83°F.

The Mexicans shot three more deer this afternoon.

The creek at the exit of the canyon contains many Hyla, tadpoles, and a few very small fish estimated to be 1.5 inches in length.

As one progresses down the creek, the willows become further apart and the stream bed sandy with large granite boulders and boulder outcrops interrupting its flow.

At a point where the stream starts dropping from the flat a water-flow station has been built. It is composed of a dam with a V-shaped opening in it in which a measuring stick has been inserted. A larger gauge-stick is also on the canyon wall.

Spotted Towhees are very numerous in the vicinity. All were seen in the forest, many of them scratching in the leaves below the trees in the same manner noticed in Strawberry Canyon at Berkeley California. Their song and chip-notes struck me as being slightly different.

Two Mexican boys brought a young Red-tailed Hawk into camp this afternoon and said that they had obtained it from a tree. They took great joy in tormenting



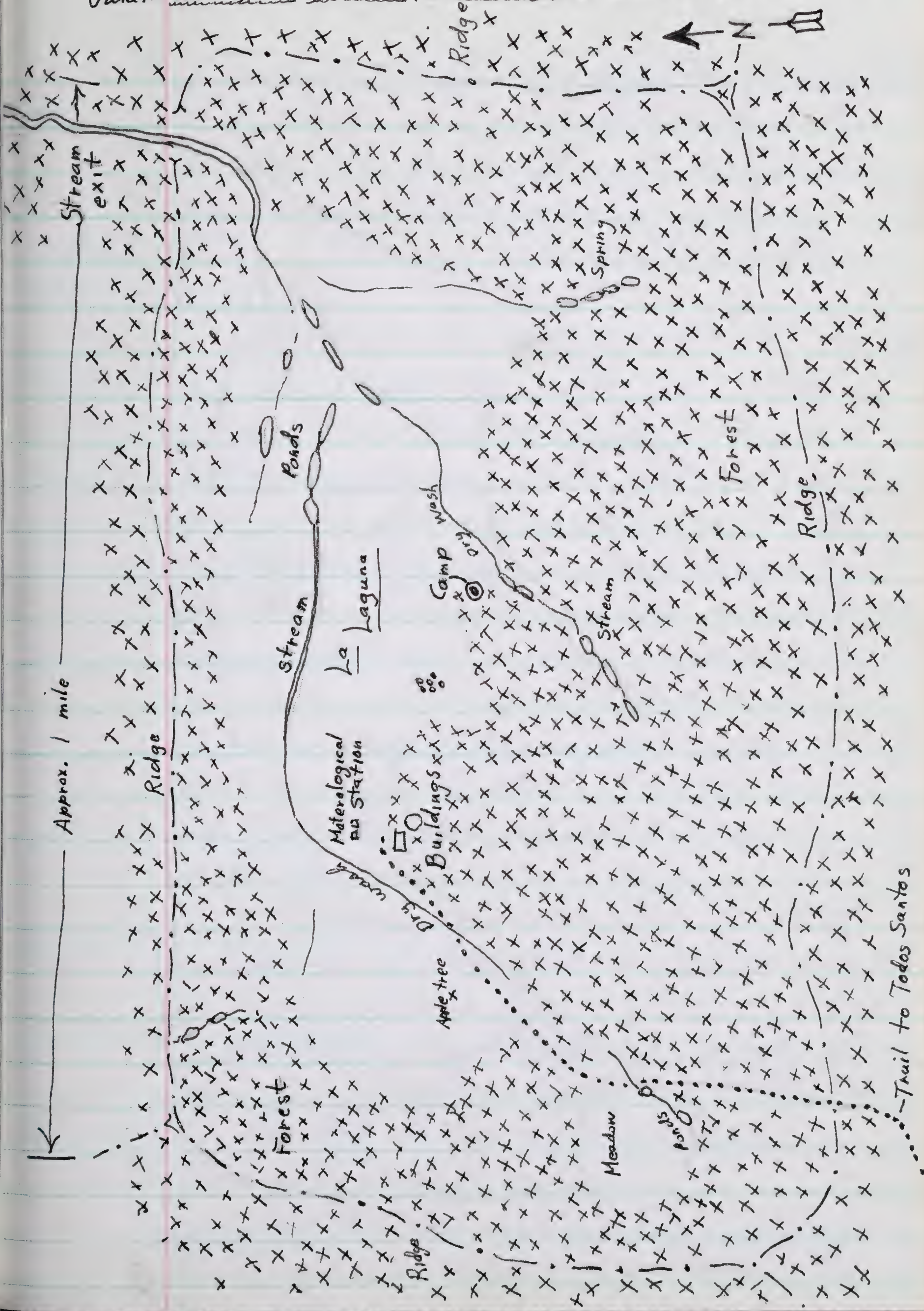


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June 12 La Laguna, 6200<sup>+</sup> ft, Sierra de la Laguna, Baja California







Quast  
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# Journal

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June 12 La Laguna, 6200<sup>+</sup> ft, Sierra de la Laguna, Baja Calif.  
it by swatting it with sticks and their  
hands. Dr. Benson finally interfered  
and released it away from camp.

June 13 Same Location Minimum temperature last night was  
51°F.

Shot bats last night and obtained 1 Tadarida  
mexicana, 1 Pipistrellus hesperus, and 2 Eptesicus  
fuscus. Found that the Dasypterus egg and  
Tadarida mexicana would feed in the western  
area of the flat over the flat and not along  
the forest border as the Eptesicus fuscus and  
Pipistrellus hesperus. I can find no explanation  
why the bats were much more numerous over  
the western section of the flat at dusk than  
they were over the eastern section where ponds  
and running water exist. The bats appeared  
at 7:20 last night, all species being seen  
within 10 minutes.

49 Museum Special mouse traps baited with  
walnut and set along stream exit canyon among  
willows and grass caught 2 Peromyscus truei  
with no other traps disturbed. No other shrews  
have been caught subsequent to Keith's. (Murray)

Departed La Laguna about 10:30

June 13 Todos Santos, 50<sup>+</sup> ft, Baja California

Shot bats this evening that were flying  
over sugar-cane fields and around palm trees





Quast  
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## Journal

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June 13

Todos Santos, 50<sup>+</sup> ft Baja California  
about 200 yds NW of town. A small stream  
for irrigation flows in the fields here and  
the bats, particularly the Tadarida mexicana  
and Sasypterus ega, congregated over a spot  
where the sugar cane fields met the palm  
trees, other trees, and the stream. The bats  
were flying at 7:15 and continued doing so  
till dark. I shot two Tadarida mexicana of  
which one was soot black; presumably from  
roosting in a chimney during the day time.

June 14

Mina Palmar del Medio, 400<sup>+</sup> ft 4 mi ESE, Pescadero, Baja Calif.

Camped last night on the playa south of Todos  
Santos. Minimum temperature there last night was  
59°F.

Visited a mine at the above location this afternoon.  
Pescadero is a small village south of Todos Santos,  
the principal industry of which seems to be  
raising sugar cane and corn. The road to the  
mine we investigated turns off the main road  
about 2 miles south of Pescadero and leads  
into the foothills of the La Laguna mountains.

The mine was located on an abandoned road  
about 500 yards south of a small canyon  
containing a dozen palm trees from which  
the mine was named. It consisted of a  
single horizontal shaft about 75 yards  
in length and curved in an arc so





Quast  
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June 14 Mina Palmer del Medio, 400<sup>+</sup> ft, 4 mi ESE Pescadero, Baja  
that it formed another exit on another <sup>Calif</sup>  
side of the low rounded hill containing  
it. The center of the shaft broadened  
vertically into a small stope and was  
diagonally braced with timbers and roofed  
with wood in several spots. Many Macrotus  
californicus were seen and caught and  
found to be of both sexes. The Macrotus  
were first seen about 20 feet from the  
opening.

Previous to visiting this mine another was  
investigated that lay on the opposite side  
of the hill about one mile north of the above.  
It was located on the north-facing slope  
of the hill and was made up of an angled  
stope of about 75 yds length and going  
down through three rough levels an  
estimated 80 feet. The stope was at an  
angle of about  $50^{\circ}$  to the horizontal and  
in a dilapidated condition, numerous  
cave-ins being noted. Murray netted  
five Natalus mexicanus near the lower-  
most and almost inaccessible level.  
The Natalis were noteworthy in the fact that  
they were all brilliantly colored from a  
bright orange-brown to a brilliant orange.  
Larger bats (Myotis?) were also seen





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June 14 Nina Palmar del Medio, 400+ ft., 4 mi. ESE Pescadero, Baja Calif.  
but none were captured. No surface water was seen in the vicinity although it is possible that it existed in an arroyo about 2 miles east of the location. At the foot of the large furrow in the hill caused by the mining operations lie several large rock and concrete tanks, completely dry, and the remains of several adobe and brick buildings. A lime kiln is visible from the mine being about 1 mile east of it on a <sup>SW</sup> south-facing slope in the center of a large white hillside. A granite or onyx quarry lies above this and east of it.

June 15 La Paz, Baja California

Arrived here about 10:30 P.M. after a rapid but rough ride over the badly cordoned road between here and Todos Santos. Slept last night in a wash 15 miles this side of Todos Santos. Minimum Temperature last night: 63°F. Raining in the south in region of La Laguna early this morning and a few sprinkles where we slept but clearing towards noon.

June 16 <sup>Same</sup> Location. Slept about 1 mil. south of La Paz last night by roadside. Minimum Temperature 68°. Soldiers are stopping trucks from the south to search for contraband sugar. Wind last





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June 16 La Paz, Baja California

night the the road north of Mulego was washed out the day before yesterday by a rain storm.

June 17 W. end Llano de Hurey, 50<sup>+</sup> ft, Baja California

Arrived here about 6 P.M. yesterday after driving from La Paz. Minimum temperature last night was 53°F. No bats seen last night at dusk.

We are camped on the border of a large circular lake bed that evidently contains water only after heavy rains. A large connected series of these beds occurs in this area, the road passing through many of them. This location has a bed about  $\frac{1}{2}$  mile in diameter, appearing absolutely flat in its center and surrounded on all sides except the eastern with low sand dunes sparsely covered with *Opuntia cholla*, *Cardone*, *Acotillo*, and a few desert shrubs. In back of the dunes more dense desert vegetation occurs. The playa is made up of dark silt and profusely covered with large mud cracks up to 10 inches deep. Growing in this soil are short bushes and plants of from 3 to 12 inches in height quite densely in most of the area. All these have been trampled by cattle and are dry at this time of year. Surrounding the playa is an intermediate area, between the sand dunes and the dry mud, covered with sand but having isolated hillocks





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June 17 W. end Llano de Hiley, 50<sup>+</sup> ft., Baja California  
on which the small dry plants having been  
growing in tufts. Within these hillocks numerous  
mouse-burrows may be seen and their tracks  
are abundant in the sand around the hillocks.

47 live traps baited with bird-seed and set  
in playa and intermediate area last night caught  
21 Perognathus baileyi. Dr. Benson set his live  
traps in the same habitat and obtained one  
Peromyscus maniculatus in addition to more Pero-  
gnathus baileyi. Tevis and Murray, trapping in  
the sand dunes caught Dipodomys agilis, +  
merriami and Perognathus baileyi + arenarius.  
I caught one Dipodomys merriami in a rat trap  
baited with walnut in the sand dunes last  
night.

June 17 Pozo Grande, 25°46' N, 112°02' W, Baja California

Arrived here about 6 P.M. after a fast trip from  
the previous location, leaving there about 1:30 P.M.  
Had dinner at one of the houses and then went down  
to the pool to hunt bats. Found the large pond  
in about the same condition as it was previously,  
the water being a little lower and of a darker  
green color. The first bats seen were at 7:30 P.M.  
and turned out to be Eptesicus fuscus which  
were flying low about the Mangle dulce, Mesquite,  
and other bushes in the wash. Many were seen  
flying down the wash and struggling into a





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June 17 Pozo Grande,  $25^{\circ}46'N$ ,  $112^{\circ}02'W$ , Baja California  
~~minimum, minimum, minimum, minimum, minimum~~  
strong breeze from the west. While feeding in  
the manner they made excellent targets and  
I obtained five and Dr. Benson eight. At  
7 PM many Purple Martins and Violet-green Swallows  
were feeding above the pond in what almost ~~to~~  
appeared to be a cloud of birds. They disappeared  
just at late dusk 7:30 and the bats appeared.  
At sundown many Night Hawks were seen, some  
flying very close to us and drinking from the  
pond while in flight. Despite their flying within  
five feet of us no sound of the air in their feathers  
was heard. At dark about ten ducks flew  
over the pond and attempted to alight but  
were frightened by our presence.

We were disappointed to find that very few  
Myotis yumanensis were to be seen around the  
pond. Last time we were here they were very  
plentiful, feeding in a large group low over  
the water and among ~~bordering~~ <sup>bordering</sup> bushes, but this  
time only four or five seen and only one netted  
(by Lewis).

White-winged doves and Mourning doves were  
also common before dark.

June 18 San Jorge,  $5^{\circ}44'N$ ,  $112^{\circ}07'W$ , Baja California  
~~minimum, minimum, minimum, minimum, minimum~~

Drove the short distance between here and Pozo  
Grande this morning before breakfast.

Minimum temperature last night at Pozo Grande was





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June 18 ~~San Jorge, 5<sup>+</sup> ft, 25°44'N, 112°07'W, Baja California~~  
51°F. Maximum temperature was not taken here today,  
but it has been cool and pleasant with a steady  
breeze blowing from the sea.

Set out 48 live traps baited with Bermuda-grass  
seed on hill east of camp this evening. Traps were  
set among Opuntia bushes, heavily parasitized with  
Orchella, Lumbei, and Pitaya agria. There is  
abundant mouse-sign in the sand among the  
above-mentioned vegetation.

Looked for bats this evening, but none were  
seen by the group.

June 19 <sup>Lays</sup>  
Location.

The 48 live traps caught 2♂ Dipodomys merriami,  
10♂, 8♀ Perognathus arenarius, and one ♂ Perognathus  
baileyi baileyi; and 50 Museum Specials set  
in flat north of camp among Mangrove Dulces caught  
7♂, 3♀ Perognathus arenarius and one Perognathus  
baileyi. Those specimens caught in the Museum  
Specials were badly eaten by ants and only the  
skulls were saved.

Minimum temperature last night was 63°F,  
maximum today was 79°

We are camped by a fishermen's shack on  
the east bank of the large estero here. The  
estero is about 800 yards wide and appears to  
be about  $\frac{3}{4}$  mil in length, and is bordered  
by Mangroves in practically all its extent.

See map pg. 130





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June 19 San Jorge, 5<sup>±</sup> ft, 25°44'N, 112°07'W, Baja California

The only places visible from camp where mangroves are not growing is this place and the southern outlet of the estero.

South of camp about 75 yards a large patch of Mangroves occurs that is circular in outline and of approximately 50 yards in diameter. Despite the fact that the area is flooded at high tide, Museum special traps set in the area last night by Dr. Benson + Murray caught some Perognyscus maniculatus.

The hills on the east side of the estero are mainly of yellowish sand and shell and grown with clumps of Ocotillo, Pitaya aquia, Cholla and Limboi. By far the greatest number of plants is the Ocotillo which is covered with the moss-like Orchilla parasite. Clear sand that is quite firmly packed occurs between these bushes and at this time is heavily covered with the tracks and burrows of pocket mice. The north end of the estero ends in mangroves beyond which is a sandy flat continuous with the sand dunes on the west side. To the south and at the estero outlet small sand cliffs are visible apparently where the tidal waters are undercutting the sand dunes. This estero is supposed to be the





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June 19 San Jorge, 5<sup>+</sup> ft, 25°44'N, 112°07'W, Baja California  
northernmost of a series running down the  
coast from here southward.

Birds seen to date: Caspian (?) Tern, White  
Ibis, California Jay, Brown Towhee, Plumbeous  
Snatchcatcher, Semi-palmated Plover, Osprey,  
Raven, Vulture, Caracara, Purple Martin, and  
Reddish Egret.

California jays are common here in the  
Mangroves and "Mangle Dulce." They are most  
frequently seen in the vicinity of these plants  
which border the estero. Tevis said this after-  
noon that he had seen them eating the small  
red berries of the "Mangle Dulce" and I witnessed  
them eating some small crabs of about 1 in  
in length on the mud beach.

The mud areas around the Mangroves abound  
in crabs and I have seen at least four types  
all of which live in burrows in the mud. The  
Mangroves vary in thickness from five feet  
in the thinner portions of the border to fifty  
or seventy five yards.

Heard a clattering sound from the Mangroves  
across the estero this evening which Dr. Benson  
said was a Rail.

Have seen no grass or salt-grass so  
far in the region of the estero. Small patches  
of Salicornia occur in the flat places just





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June 19 San Jorge,  $5^{\circ} 44' N$ ,  $112^{\circ} 07' W$ , Baja California  
above the high tide mark. A region of "Mangle  
Dulce" occurs in back of the mangroves, and  
a small, dense, thick-leaved bush from 8 inches  
to two feet high (Tumble-like weed: Lamb) occurs  
in flat areas between the small sand cliffs  
and the sand region.

Dr. Benson and I fished this evening off  
the beach next to camp and in about  $1\frac{1}{2}$   
hours caught several Catfish, a very small  
Hammer-head shark, a Shovel-nosed shark and  
several other kinds of scaled fish. Clams  
occur in abundance in the mud and oysters  
of approx. 3 in diameter are common on the  
Mangrove roots.

June 20 <sup>Same</sup> Location Minimum temperature last night was  
 $62^{\circ} F$ , maximum today was  $76^{\circ}$ . The weather  
has been clear with an ocean breeze coming  
up at about 11 AM yesterday and today.

50 Museum special traps baited with walnut  
and set along thin mangrove strip north  
of camp caught 1 ♂ Peromyscus maniculatus  
last night. Traps were set under the Mangroves  
on the dead Mangrove leaves at the high-tide  
mark.

48 live traps set among Ocotillo and  
Pitaya agris clumps in hard-packed sand  
NE. of camp last night caught 1 ♀ Dipodomys





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June 20 San Jorge, 5<sup>±</sup> ft, 25°44'N, 112°07'W, Baja California  
merriami, 1 ♀ Perognathus baylei, and 4 ♂ + 4 ♀  
Perognathus arenarius. Murray, trapping in the  
same area, caught 1 Dipodomys agilis in addition  
to the other species.

Dr. Benson caught 1 Canis latrans in a  
steel trail-set last night.

June 21 <sup>Same</sup> Location Minimum temperature last night was 60°F,  
maximum was 77° today.

Set 50 Museum Special traps in bog  
by mangrove at north end of estero last  
night, and caught 3 ♂ + 1 im ♂ Peromyscus  
maniculatus. None of this species was caught  
in the bog proper but rather along the  
"Mangle Dulce" and Mangroves. 50 live traps  
were set on dry ground along line of "Mangle-  
Dulce" in the same area and caught 3  
Perognathus arenarius. The line of "Mangle  
Dulce" referred to excluded the Peromyscus maniculatus  
on its left in wet soil and the Perognathus  
arenarius on its right on the dry soil. Dr.  
Benson caught 2 Canis latrans in a trail  
set at point where bog, mangroves, and line  
of "Mangle Dulce" meet. The flat has many  
well-worn Coyote trail on it and they were  
heard howling last night for the first time  
here. Tevis caught one Perognathus baylei  
on the flat at the north end of the estero with

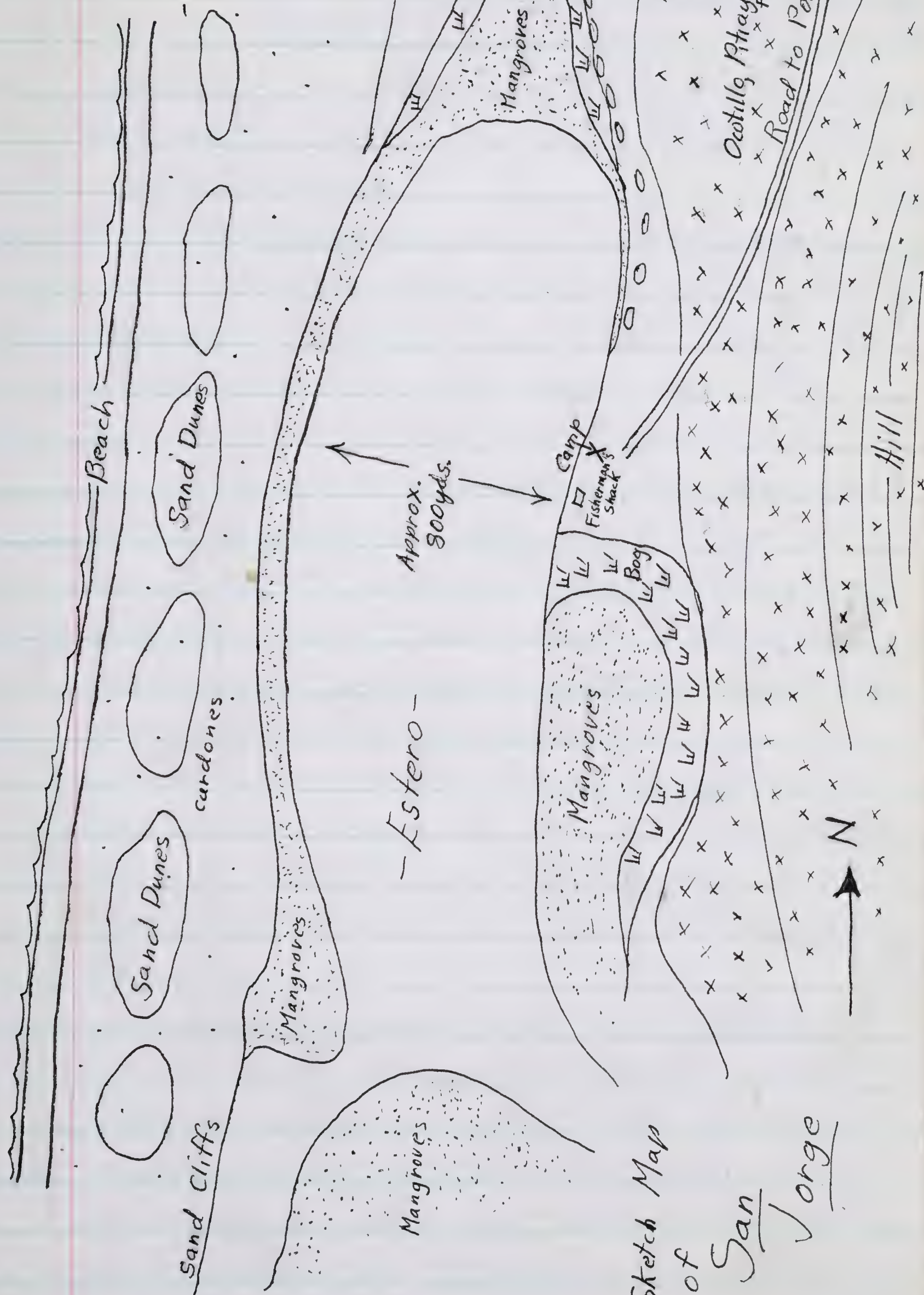




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June 20 San Jorge, 5<sup>+</sup> ft 25°44'N  
112°05'W, Baja California



Sketch Map  
of San  
Jorge





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June 21 San Jorge, 5<sup>+</sup> ft, 25°44'N, 112°05'W, Baja California  
~~several~~ several Perognathus arenarius, showing, as far as I am concerned that the two share the same habitat at this locality to its fullest extension.

One Osprey was seen this morning carrying a fish, head pointed in the direction of flight and aligned with the bird, in its ~~talons~~ talons. The Osprey was flying over camp in a westerly direction and evidently has its nest inland.

It is interesting to note that we have seen no bats during our stay here although we are at most 3 miles in a straight line from Pozo Grande. Every evening just before dark a group of Purple Martins fly southward over camp (from Pozo Grande?).

Dr. Benson shot a Bush Rabbit when we were driving on the road between Pozo Grande and here, and I have seen one rabbit of smaller size on the hill east of camp.

June 22 San Jose de Comondú, 700 ft, Baja California

Arrived here late yesterday afternoon after departing San Jorge about 2 P.M. Good road on this stretch except for a few sandy and dusty spots. Shot bat last evening among palms on floor of canyon near town but saw only two of the larger bats. Many of the





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June 22 San Jose de Comandu, 200 ft, Baja California  
smaller size bats were seen and two Pipistrellus  
hesperus were obtained by Dr. Benson and Murray.  
The larger sized bats seem very scarce here for  
very few were seen by the group last night.

Tavis caught a Spotted Skunk in a  
Schuyler baited with Mangoes and set in the  
rocks on N. side of canyon last night.

Minimum temperature last night was  $69^{\circ}\text{F}$ .  
Windy in the evening with fog late that night  
and until 7:30 A.M. this morning.

Bats started flying at 6:45 <sup>last</sup> ~~this~~ evening  
with those other than the small ones not being  
seen until 7:30.

June 22 8.3 mi by road N. Canisoli,  $26^{\circ}32'N$ ,  $111^{\circ}35'W$  Baja California

Stopped here and investigated small caves in  
dark lava conglomerate above the road. One cave  
ending in a crevice about 10 feet from the outside  
contained Macroton californicus only - six were  
taken by the group. Caves were used by Indians  
as evidenced by shells found there and remains of  
a red ochre inscription on a rock.

June 23 Santa Rosalillo, 25+ ft, SE end Bahis de Concepcion, Baja California

Arrived at this ranch which is just below the lower  
end of Bahis de Concepcion yesterday about 6 P.M.  
The ranch is composed of a shack, a corral, and  
a small waterhole of very poor water, all located  
in flat land by a medium sized wash. The





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June 23 Santa Rosalillito, 25<sup>+</sup> ft. S.E. end Bahía de Concepción, Baja Calif.  
water hole is small (4 x 6 ft) and about five feet deep, the sides being reinforced at the higher levels by rock siding. The ranch is occupied this time by three Mexicans who have about 20 head of cattle and a few horses and burros - a surprise to us for we had found the ranch vacant at the time of our previous visit.

On the surrounding flat sandy land a forest of Cardones grow and are bearing fruit at this time. We tried the fruit but found it unsatisfying - it bursts open when ripe, while on the cardone, exposing its red interior and small black seeds.

Shot bats last evening and found rather few flying at dusk. Five or six Eptesicus fuscus appeared at 7:40, flying down the wash and feeding on the lee side of mesquite and Palo San Juan trees. Several of these were obtained, one of which was netted by Murray as it flew low above the ground among the Cardones.

At dark went to the water hole and found quite a number of them feeding about the water and occasionally drinking it. I netted 3 ♀ Antrozous minor there between 9 and 11:30 and one Myotis californicus which appeared to be sick, it flying very slowly and in an uncertain





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June 23 Santa Rosalillito, 25<sup>+</sup> ft, S.E. end Bahía de Concepción, Baja Calif.  
manner, finally falling into the water after trying to drink it while in flight. I rescued it with my net.

50 live traps set in sandy flat among Cardons, Mesquite, Saramboullo, and Cholla last night caught one im. ♂ Perognathus arenarius and one ♂ Dipodomyx merriami. The others caught near in their live traps, the low catch possibly having been a result of a full moon last night.

Minimum temperature last night was 70°F.

June 24  $\frac{1}{4}$  mi south of Mulegé, 50<sup>+</sup> ft, Baja California

Arrived here about 5:30 P.M. yesterday and could not drive into town because of high tide raising the water level in the creek bed too high for the cars. Earlier in the day the tide was found to be entering the road in the northern end of Concepción Bay.

Had a flat tire on the International at the south end of Concepción Bay yesterday while Dr. Benson was investigating caves in which he found one Gecko.

We camped near the road leading past the mission at Mulegé. We are about 500 yds from the mission and next to an olive orchard that is being irrigated at this time of year. We are about 200 yards from the pond above the Mission.





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June 24  $\frac{1}{4}$  mi South of Mulege, 50<sup>+</sup> ft, Baja California

Shot bats last night by the palm trees at the border of the pond above the mission. They appeared about 7:20, the first being seen were small bats (probably Pipistrellus hesperus) flying very high and from the hills. Nighthawks appeared at the same time soon to be joined by the larger bats, Eptesicus fuscus and Dasyspermus ega. The small and large bats and Nighthawks formed a large cloud over our heads and Pipistrellus hesperus, Dasyspermus ega, and Eptesicus fuscus were shot by Tavis and Dr. Benson. Just before dark the cloud of bats disappeared leaving the Eptesicus and Dasyspermus to feed singly among and along the palm border.

I netted one Eptesicus fuscus at 8:30 last night out of many that were flying along the edge of ~~palm~~ olive trees and over the trail near camp.

Visited the large bat cave about 500 yards from here in the side of the mountain this morning. Found the number of bats much fewer than at the time of our previous visit. We found about 50 Macrotonus californicus in the second room of the cave and obtained one Leptonycteris and one ~~Thomomys~~ Mormoops megalophylla. Another cave said to be nearby was not investigated.





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June 24  $\frac{1}{4}$  mi South of Mulege, 50<sup>+</sup> ft, Baja California

At the opening of the cave investigated in which Mormoops megalophylla, Leptonycteris and Macrotes californicus were found was found purple blotches on the rocks below an overhanging piece of the cliff. It looked as though it might have been fruit stains from pieces of some kind of fruit brought there by one of the bat species.

Minimum temperature last night was 69° a clear, still night with no overcast. High humidity here last night and a few mosquitoes adding the threat of Malaria.

Departed here about 12:30 P.M. and arrived at Santa Rosalia about 6:00 P.M. after spending two or three hours on the desert between the two towns trying to fix an oil line on the Dodge that had been broken by vibration. The repairs were only partially successful and the Dodge will have to go into the garage tomorrow.

June 25 Santa Rosalia, Baja California

Arrived here about 6:00 P.M. yesterday and were delayed an hour at the southern outskirts of the town for a diphtheria examination. It is said that a diphtheria epidemic is occurring at La Paz at this time.

At 7:30 saw many small bats and Dasypus sp flying along the streets of





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June 25 Santa Rosalia, Baja California  
town (yesterday).

Slept near the beach about 1 mile north of town last night. Heard and saw what was very probably Eptesicus fuscus feeding over the brush there.

Minimum temperature last night was  $71^{\circ}\text{F}$ .

June 26 Los Martires, 300<sup>+</sup> ft, 23 mi by road N.W. San Ignacio, Baja Calif.

Arrived here about 5:00 PM after eating dinner at San Ignacio (yesterday). The wind was blowing steadily from the sea and a large fog bank was visible at sunset. Shot bats at dusk and obtained one Eptesicus fuscus and one Myotis californicus. The two bats were seen flying low among the brush and cardone, their flight greatly affected by the wind.

A cement tank and a long cement watering trough exist at this place and we attempted to net a few bats after dark but were unsuccessful possibly because of the strong wind that was blowing. Several small bats were seen however.

Minimum temperature last night was  $58^{\circ}$  it seeming quite cold in the evening and with a heavy fog overcast on the desert until 9 this morning. The wind blew steadily all night.

Los Martires is no more than a small house with neighboring corral and watering trough and a windmill. It is situated in the flat





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June 26 Los Martires, 300± ft, 23 mi by road NW San Ignacio, Baja Calif.  
desert plain, surrounded by Cardone, sand,  
Cholla, and low bushes. Just south of this place,  
the first Cirios were seen.

June 26 Arroyo San Louis, 800± ft, 9 mi W Calmalli, Baja California

Arrived here just before sunset and investigated  
a nearby mine called "Mina de la San Louis". It  
is located several miles from the north junction  
of the main road and the one leading to Calmalli  
and near the latter road. The mine is located  
on the north side of the arroyo and its  
tailings are visible from the road.

The mine is composed of a horizontal tunnel  
of about 50 yards length the narrower portions  
of which are about 4 x 5 feet. Towards the  
end of the tunnel several small side passages  
exist and the tunnel roof gets higher, finally  
connecting with the back end of a vertical  
slope leading to the surface near the top of the  
hill. The slope is 30 or forty feet deep and  
its 6 foot width is braced with cross timbers.  
The back part of the slope is dark where  
it connects with the rear of the tunnel. The  
mine has undoubtedly been in disuse for many  
years, part of the iron rails being torn up,  
a light barricade being erected within its  
entrance and what appears to be a coral  
placed around its entrance. The level of





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June 26 Arroyo San Luis, 800 ± ft, 9 mi W Calmelli, Baja Calif.  
the horizontal tunnel is at least 40 feet above  
that of the wash and arroyo it faces.

We entered the mine about an hour before  
sunset and noticed bats flying when we  
had traversed  $\frac{1}{3}$  its length and had entered  
complete darkness. Upon pursuing the bats  
down the tunnel we finally reached the end  
and a side passage near the end which when  
blocked off yielded several Choronycteris  
mexicana. Both lactating females and young  
bats,  $\frac{3}{4}$  grown, of this species were obtained.  
Also obtained this afternoon were three Corynor-  
hinus, two of which were picked off the  
rough  $5\frac{1}{2}$  foot tunnel ceiling about half  
the distance from the entrance. Both were  
in a torpid state, their long ears tightly  
rolled at the sides of their heads. The two  
were not close together but separated by  
at least 15 feet and were not disturbed by  
our passing underneath them with flash-  
lights - our not noticing them until we  
had passed one, the other being collected  
on the way out. One was obtained by  
Murray with his hand net. One Myotis  
californicus was seen but flew past us  
out the tunnel entrance into the daylight.  
The four of us then climbed the hill to





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June 26 Arroyo San Luis, 800<sup>+</sup> ft, 9 mi W. Calmali, Baja California.  
~~Arroyo San Luis, 800<sup>+</sup> ft, 9 mi W. Calmali, Baja California.~~  
investigate the vertical slope from the surface. The slope was found to narrow in length as it approached the surface, the actual entrance being about 6 x 8 feet. Across the opening a large bracing timber was firmly placed and others were visible below, widely separated. As I approached the opening I saw several large bats flying below which were probably Choeronycteris mexicana. Dr. Benson lowered himself into the slope and immediately scared out a large Born Owl which flew back into the darkness of the slope interior. He subsequently scared out one Choeronycteris mexicana which I definitely recognized as it flew past me and three Myotis californicus, one of which was knocked down by the net and captured. The Myotis californicus of the slope were not seen until Dr. Benson had fired several shots into the slope interior which was inaccessible, and one did not leave until he was climbing out the opening — this species seeming very reluctant to fly and leave the shelter. The last Myotis californicus made repeated attempts to enter the opening of the horizontal tunnel further down the hill which was being





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June 26 Arroyo San Luis, 800<sup>±</sup> ft, 9 mi W. Calmelli, Baja Cal.  
~~mining area, blocked by Tevis.~~ It was sunset when  
we left the diggings to shoot bats in  
the arroyo.

Only one bat was seen this evening and  
that a very small bat flying quickly  
across the sand surface at about 4 foot  
elevation. It was too dark to shoot by  
this time.

June 26 Mina Sol de <sup>Mayo</sup> Mio, Calmelli, Baja California

This mine was visited earlier than the  
location above (about 3:00 P.M.).

Mina Sol de Mio is an abandoned mine  
found near Calmelli on the road between  
Calmelli and El Arco. This mine is character-  
ized by very large tailings ~~and~~ and occurs  
next to the road in the hillside. This mine  
has also been in disuse for many years  
judging from the rusted machinery on the  
surface and a partially dismantled stamp  
mill. Two tunnels were visited, one at an  
elevation of about 60 feet above the road bed  
and with a large tailing pile in front of it and  
another which was about 100 feet north of  
the first, at road level, with few tailings, and  
the tunnel protected by a partially closed  
iron lattice door. The first tunnel was investigated  
and found to be <sup>blocked by</sup> partial earth fill in its





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June 26 <sup>Mayo</sup> Mina Sol de ~~Mio~~, Calmalli, Baja California  
~~entrance~~ entrance ~~with~~ with enough space left at its top  
for one man to squeeze through at a time. We entered  
the tunnel and followed the iron cart rails until  
a vertical shaft was reached about 150 feet  
back in the mine. The shaft dropped for five  
or six levels, perhaps more, it not being inves-  
tigated at the lowest ones. One or two large  
bats were seen when we reached the end of  
the cart line but they were not obtained. The  
others went down the shaft and while waiting  
for them I noticed a small crack in the roof  
above the shaft that had been closed by wooden  
planking. Several bats flew into this area  
but were not identified due to the fact that  
my flashlight was not working. Attempts at  
netting them as they flew by in the dark were  
futile, but they seemed to be very nervous  
and restless due to our entrance and the  
noise of the others of the group investigating  
the lower levels of the mine. Only one bat was  
obtained here and that by Tevis down in  
the lower levels of the shaft. It turned out  
to be Macrotona californica.

We then investigated the tunnel north  
of and below the first one. As we passed  
through the iron gate at its entrance we  
disturbed hundreds of large flies, but were











Quast  
1948

Journal

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June 27 Arroyo San Luis, 800<sup>+</sup> ft, 9 mi W. Calmelli, Baja California  
Owl, Purple Martin, California Quail, Ash-throated  
flycatcher, White-winged Dove, and Olive-green  
swallow.

Brush Rabbits and jack Rabbits are very common, the Brush Rabbits being seen mainly among the denser vegetation of the wash and bordering areas, the jack Rabbits among the dense Opuntia, Phacelia and Echinos vegetation of the area bordering the wash. Coyotes were heard yapping and howling in loud confusion this morning before sunrise a short distance from camp and Dr. Benson caught one in a single steel set he put out last night. Tevis caught one Geopha last night.

I revisited the horizontal tunnel of the mine this morning and obtained two Choronyctus mexicanus; a female with a very large embryo and a juvenile about  $\frac{3}{4}$  grown.

I was unsuccessful in looking at the soft sand portions of the wash in finding one square inch of sand that had not been disturbed by some mammal, bird or reptile.

From the looks of some of the new cuts in the arroyo banks it must have had water flowing in it within the last two or three years.

June 28 Santa Rosalia, Baja California

Arrived here this morning after having the





Quack  
1948

## Journal

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June 28 ~~Sancti Spiritus, Baja California~~  
Santa Rosalia, Baja California

Dodge lose a left front wheel. The bearing spindle broke between the threads and the beginning of the taper. In addition the shock of losing the left front wheel broke the right front spring (main leaf). Dr. Benson and myself drove from 6 to 12<sup>PM</sup> yesterday from the location of the Dodge breakdown (24 mi N. El Arco), and from six to 9 this morning. Murray + Tervis were left with all the provisions and equipment and are camped at that location. Telegraphed Dr. Miller at Berkeley for new parts which will probably arrive by plane here on July 2.

Saw 2 Brown Pelicans and 4 Cormorants fishing off shore at 8:30 this morning.

June 29 ~~Sancti Spiritus~~ <sup>Same</sup> Location Slept on the beach north of here last night. Minimum temperature was 59°F with high humidity yesterday, last night, and today.

Netted one Pipistrellus hesperus this evening at dark as it was feeding among brush in back of beach at place where we have been sleeping (about  $\frac{1}{2}$  mile north of town, 10<sup>+</sup> feet elevation. The Pipistrellus were feeding with a larger bat that made a continuous "clicking" sound as it flew - probably Eptesicus fuscus.

June 30 ~~Sancti Spiritus, Baja California~~  
Santa Rosalia, 10<sup>+</sup> ft. Baja California

Slept on the beach at same location as above last night. Humidity high, cumulus clouds with





Quast  
1948

# Journal

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June 30 Santa Rosalia, 10<sup>±</sup> ft, Baja California (Mina La Zonta)  
~~lightening to the east over the Gulf at dusk. Min-~~  
imum temperature 74°.

Visited a mine this afternoon lying west of this town in the same arroyo at a distance of about 2 miles by road from the center of town. The name of the abandoned mine is "Mina La Zonta" and it is composed of a single horizontal tunnel of about 4½ by 5½ feet and 100 to 150 yards in length. Its entrance is about 200 yards up a small tributary entering the Santa Rosalia Arroyo on the north side. The entrance had caved in leaving about a two foot <sup>high</sup> ~~wide~~ space through which we had to crawl into the shaft. As we passed down the tunnel we had to traverse another cave-in at half its length and then a pit about 50 feet from its end. The pit was about 25 feet deep and led to ~~another~~ another lower level which had been blocked by the storm of 1931. When we had gone about 30 yards from the entrance I saw several bats flying away from us into the mine interior. We pursued them to the end of the shaft where we found that their number had multiplied to about 20. We were successful in netting only three of them which turned out to be Leptonycteris. Upon nearing the entrance on the way out we saw the large group of bats that had flown past us congregating about the mine entrance, a few flying out. Dr. Benson was





Quast  
1948

# Journal

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June 30 Santa Rosalia, 10<sup>±</sup> ft, Baja California (Mina La Zonta).  
able to get close enough to net four of them in one swing of the net while they were still hanging and obtained 4 immature adults. In addition one Macrotus californicus was caught there. In this mine the curious red splotches <sup>seen</sup> on the rocks outside the cave at Mulege were seen again. They are just the right color to be the juice of the Cardone fruit which is ripe at this time. It is possible and probable that one of the two species in this mine carried it in. It was very hot outside and in the mine when it was investigated (about 3:00 PM). We were soaked in perspiration from the slight exertion of walking into the tunnel while bent over. Only one entrance existed to the mine and there was practically no air circulation.

June 30 San Luciano, 100<sup>±</sup> ft, 5 mi S. Santa Rosalia, Baja California  
San Luciano is a small mining town 5 miles by road south of Santa Rosalia. It is built in the south-facing slope of a large hill and is of the same type and ownership as Santa Rosalia. It is surrounded by the same type of terrain as Santa Rosalia, i.e. soft sedimentary varve material flooded with the round boulders of alluvial material. The hills of this river-washed region consist mainly of small boulders embedded in soft silt matrix and support only sparse vegetation; only a few small bushes seem capable of growing in it.





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Journal

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June 30 ~~San Luciano, 100<sup>+</sup> ft, 5 mi S. Santa Rosalia, Baja California~~

A possible additional cause of the sparse vegetation is the chemical smoke of a copper reduction plant that is in continuous operation at Santa Rosalia.

The arroyo that runs east from this place (heading) is of slight gradient and changes from a broad boulder-strewn streambed here to sand at its mouth, about two miles east of here, at which a small inlet is to be found.

We stopped by the road south of town, between it and a small ranch called Las Cuevitas. On the rise exists a small dam for irrigation purposes that is filled at night but contains water in a very shallow pond all day. The dimensions of the shallow pond was about 20 by 8 feet, + that of its limits when filled about 40 x 15 feet. Next to the pond towards town a cornfield exists in which patches of alfalfa are also grown.

Before sunset a few Violet-green swallows were seen flying about the pond and the scanty Copal + Palo Verde trees at that place. Just after sunset many Night Hawks appeared, some flying a few feet above the ground, some diving and skimming the pond surface to drink, and others circling the cornfield or flying high in the air. Ten minutes after the first Night Hawk was seen the first Pipistrellus hesperus was seen, to be followed in ten minutes by





Quast  
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Journal

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June 30 San Luciano, 100<sup>±</sup> ft, 5 mi S. Santa Rosalia, Baja California  
the larger Eptesicus fuscus over the cornfield.  
None of the bats seen were noticed <sup>to be</sup> drinking from  
the pond before dark. Dr. Benson obtained one  
Pipistrellus hesperus by netting it before dark  
and shot two of the Eptesicus fuscus that were  
flying over the cornfield. I obtained three of the  
latter over the cornfield.

At dark we went back to the pond and tried  
to net some of the bats that were flying about  
and drinking there. A very audible sipping  
sound can be heard when they are picking up water.  
We were unsuccessful at catching any but saw  
about ten large bats (looked and sounded like  
Antrozous in flight) that were also circling and  
drinking at the pond. A half hour after dark  
the pond was filled from a stream of water and  
we abandoned the project.

July 1 <sup>Same</sup> Location. Slept in the rocky arroyo bottom last  
night about  $\frac{1}{4}$  mile east of Las Cuevitas. A very  
warm and humid night with large cumulus clouds  
over the gulf and lightening. Minimum temperature  
last night was 80°F.

Investigated another mine just a few yards  
from where we slept and found it difficult to traverse,  
it having been flooded in the past. Did see bat  
droppings and purple sploches on the floor about  
15 feet from the entrance, but no bats were seen.  
Returned to Santa Rosalia.





Quast  
1948

Journal

150

July 10 Santa Rosalia, Baja California

Departed here last night at 7:30 after finally receiving Dodge parts. Minimum temperature for our stay here have ranged between 75 and 81°F.

July 11 10 mi SE. Mesquite, 400<sup>+</sup> ft, Baja California

Departed here this morning at 9:30 after spending yesterday afternoon and evening working on the Dodge here. Minimum temperature last night was 59°. Heavy fog this morning.

July 12 24 mi NW. Punta Prieta, 2000<sup>+</sup> ft, Baja California

Arrived here yesterday afternoon at about six. We camped beside road next to a very small deserted shack and about 100 yards from a delapidated coral. To the east of us rise the Sierra de Calamajui and the flat sandy terrain over the approx. 5 miles distance between our camp and the hills is fairly well covered with Agave, Yucca, Cardone, Cirio, Mesquite, Creosote, Sarcamboullo, Cholla, and numerous small bushes. Just west of us is a small rocky hill covered with Encelia, Yucca, Elaphrium, Barrel Cactus, Pitaya agria, Cirio, Mesquite, and small shrubs. West of this small hill, larger ones are seen to continue to the north and large lava outcrops are common on all of them. The mountains to our east and the hills at our west border a flat valley that appears to run directly North-South in direction.

Shot bats last night and obtained one





Quast  
1948

## Journal

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July 12 24 mi N.W. Punta Prieta 2000<sup>+</sup> ft, Baja California  
Tadarida femorosacca (?) #451. This bat was flying very high at late dusk and was heard before it was seen, it uttering a very high piercing note continuously while in flight. The note is so high in frequency that it is almost inaudible but of such a character to be uncomfortable to hear. If this is the only bat uttering this note it is common throughout the peninsula south of here, this particular note being heard after dark at almost every camp at which we have stayed.

50 live traps set among rocks on small hill just west of camp last night caught one male Peromyscus eremicus. Traps set by others in the sandy flat valley floor caught Dipodomys agilis and merriami, Peromyscus maniculatus, and Perognathus arenarius.

Other bats obtained last night while shooting at dusk were Pipistrellus hesperus and Eptesicus fuscus.

Very heavy fog and strong wind from the south this morning making the earlier part of the morning damp and quite uncomfortable. Minimum temp. last night was 50°F. Fog clearing at 10:00 A.M.

July 13 Cataviña 1850<sup>+</sup> ft, Baja California

Arrived here about 6 P.M. yesterday after a





Quast  
1948

# Journal

152

July 13 Catavina, 1850<sup>+</sup> ft, Baja California  
~~minimum, minimum, minimum~~  
hot trip from previous camp. Minimum temperature  
last night was 55° F.

Catavina is a small ranch located above  
a sandy wash. The ranch is surrounded on  
all sides by granite boulders of all sizes  
and the soil is gravelly, being of decomposed  
granite. Four or five large mesquites grow  
around the houses and about fifteen palm  
trees some of which are very tall grow in  
the wash and in a small gulley south of the  
houses. The earlier ranch is located about  
300 yds down the wash (west) and it is owned  
by the father of the proprietor here. Water occurs  
here in a small pond formed by a dam in  
the gulley 200 feet south of the house. This  
water is used for irrigating a few squash plants  
and fig trees near the main wash. Water is  
at the present time running down the gulley to the  
wash where it forms several small ponds before  
it disappears. Another pond west of the house  
and near the fig trees is also used for irrigation.

Shot bats last night in the wash west  
of the houses and obtained 4 Pipistrellus  
hesperus. This species appeared before sundown,  
a pair being seen flying together down the  
wash. Murray obtained one Eptesicus fuscus  
also & Dr. Benson a Dasypterus egg.





Quast  
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Journal

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July 13 Cataviña, 1850<sup>±</sup> ft, Baja California

After dark one Sasypterus egy and a Myotis californicus were netted over the pond south of the house. At this pond tules are growing and both Hyla and Bufo punctatus present. Bats were infrequent over this pond last night.

Several Western Martins were flying here before dark and Linnetts in abundance spent the night in some of the taller palm trees.

July 14 La Arenosa, 1600<sup>±</sup> ft, 10 mi W. San Fernando Mission, Baja Calif.

Arrived here about 7 P.M. yesterday after having blowout on International truck  $\frac{1}{4}$  mile west of this place. Minimum temperature last night was 58°F.

This place is a ranch that has all appearances of being new. The house is a six room stucco structure and is surrounded by fields that are being cleared at present. Two large reservoirs are present 25 feet east of the house.

Surrounding the flat area on which the ranch is located are fairly high hills of volcanic rock and granite overgrown with Cien, Cardon, Cholla, Pitiayo agria, Yucca, Saramboullo, etc.

Two bats (Pipistrellus hesperus) were obtained by shooting yesterday at dusk. Efforts to net the few bats that visited the reservoir after dark were unsuccessful.





Quast  
1948

Journal

154

July 14

Visited this mine early this afternoon and did not find the bats as plentiful as our previous visit had found them. Only two bats were seen and both of them were captured. They were Chroonycteris mexicana and found near the opening of a vertical shaft into the mine.

July 15

8 mi N. Rosario, Baja California

Was forced to camp here late yesterday afternoon due to the breaking of the right rear spring of the Dodge.

Minimum temperature last night was 51°F.

We are camped in a small wash in a topography of sedimentary clay and river washed boulder material. The wash runs in a north-south direction and contains but small amounts of coarse sand. The majority of the earth here is of clay and the wash bottom is almost entirely made up of that material and thickly overgrown with a dry bush of about two feet in height. The low hills surrounding our camp are of clay interspersed with layers of gravel, the west-facing slopes grown chiefly with agave, the east-facing slopes chiefly with low bushes and becoming very dense in some





Quast  
1948

# Journal

155

July 15

8 mi N. Rosario, Baja California  
places. It is believed that we are camped  
only a few miles east of the ocean.

50 Museum special traps baited with  
walnut and set along base of hill and  
along face of hill west of camp caught  
one Perognathus fallax and two Peromyscus  
maniculatus last night. All three of these  
specimens were caught in the low bushes  
at the base of the hill, the larger portion  
of these traps which had been set among  
the denser bushes on the hill slope yielding  
nothing. 48 Live traps set in clay soil  
along trail through dense, dry and low  
brush in wash yielded but one Peromyscus  
eremicus (im). Traps set by Tevis in  
the more open, gravelly, Agave-covered  
~~east~~ west-facing slope on the other side  
of the dry wash yielded abundant Peromyscus  
eremicus. Murray caught one Dipodomys  
graysii in addition to the above-men-  
tioned species. Several Brush-rabbits  
were seen here and Murray obtained one  
Rattlesnake. Lizards were very scarce  
and only one was obtained, a Cnemidophorus  
labialis by Tevis.

On the whole this locality seems un-  
attractive from the collecting standpoint,





August  
1948

Journal

156

July 15 8 mi N. Rosario, Baja California  
mammals, birds and reptile seeming very scarce. The hard-packed clay soil and the dry, dusty vegetation appear to be poor for wildlife. No American Ravens, or Vultures were seen during the approximate  $1\frac{1}{2}$  days of our stay here.

July 16 Same Location Minimum temperature last night was  $53^{\circ}$ , a cold wind and fog being experienced in the evenings and mornings of both nights. Dr. Benson arrived here yesterday afternoon with the partially repaired spring and we are ready to leave this morning.

July 17 International Boundary, Tijuana, Baja California  
Had no trouble in crossing over into the U.S. this morning, neither truck being inspected. The whole procedure lasting about five minutes.





# Species Accounts

## Birds





Quest  
1948

American Raven

April 11 Punta San Felipe, 50<sup>±</sup> ft, Baja California

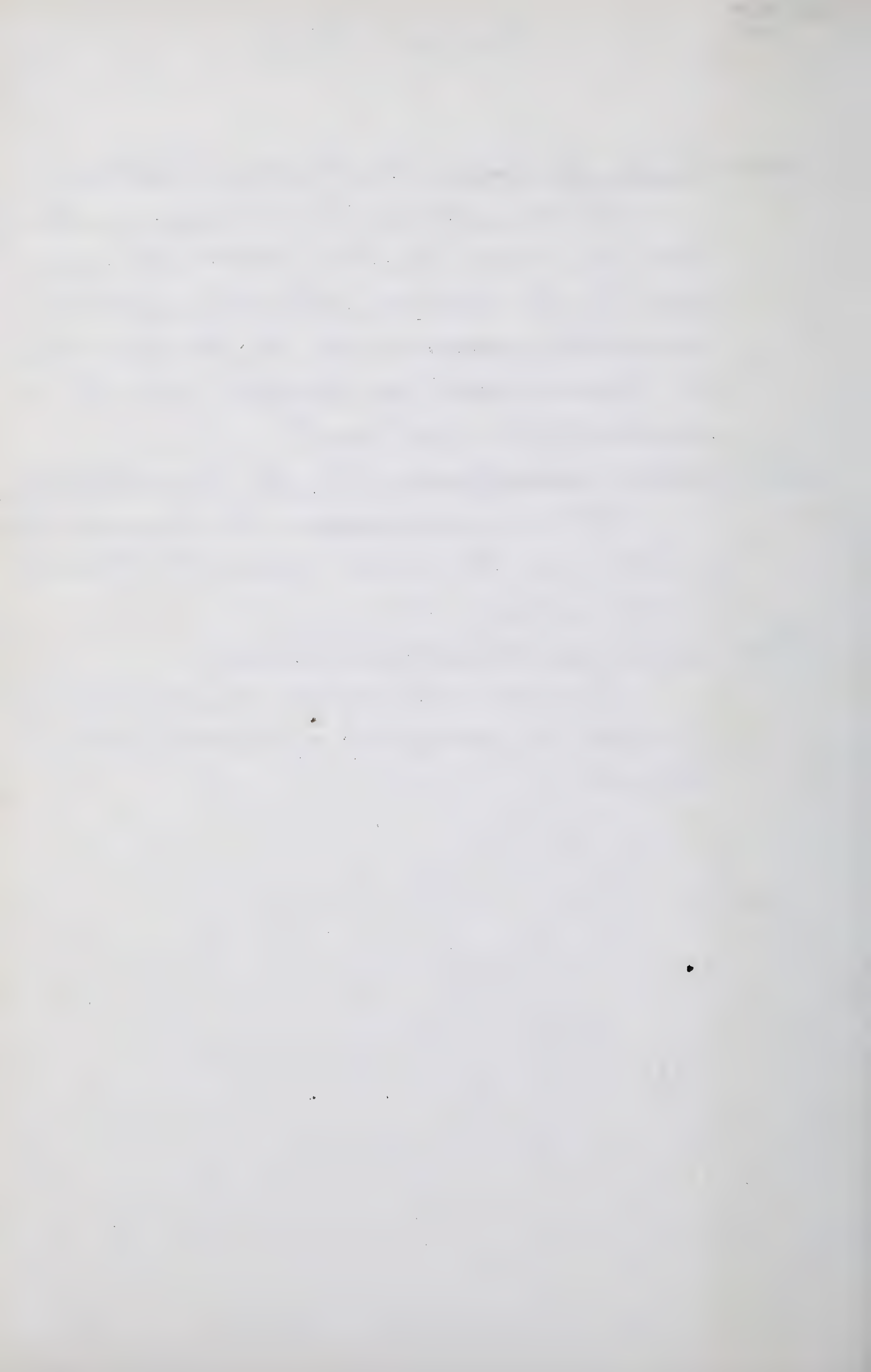
Six seen flying around camp yesterday,  
two this morning at 6:30 A.M. One was  
shot by Dr. Benson yesterday and had  
a mottled appearance to its feathers which  
Dr. Benson said was probably due to  
malnutrition in the past.

April 29 Mission San Ignacio 500 ft, Baja California

Common, and appear to be associated  
in pairs, at this date, from El Marmol  
to this place.

May 3 Mulege 25<sup>±</sup> ft, Baja California

One seen this morning in front of jail.  
One seen in garbage dump south of Santa  
Rosalia





Quart  
1948

Cactus Wren

April 17 Cerro Prieto 30 ft 20 mi SSE Mexicali, Baja Calif.

One heard singing for last hour from top of mesquite tree bordering large flat 75 yds from camp. Song a metallic warble of 4 seconds duration given between 5 second intervals. Bird is perched on highest part of tree and lifts head when singing. Preena itself occasionally between songs. When approached bird flew to another mesquite 50 yds distant, but returned when I went back to the camp. Bird does not shift position or direction during this period of observation. Time 10:40 AM, Temp. 90° F. A sultry day with mild fluctuating breeze & high overcast. From its perch bird can overlook the whole flat, our camp and all of the N side of Cerro Prieto.

Bird just shifted position to another twig on top of same tree, looking in opposite direction.





Species Accounts  
Mammals





Quast  
1948

Balantiopteryx plicata

June 2 Cerro Cirildo, 600<sup>±</sup> ft, 4 mi N. San Jose del Cabo, Baja Calif.

Eight ♂ and two ♀ put up today after they were caught at above location by Dr. Benson and Tewis. Both females had one embryo of 14 mm.

June 5 9 mi S.W. San Jose del Cabo, 300<sup>±</sup> ft, Baja California

Visited cave here located in weathered granite outcrop at an elevation of about 300 ft (estimated). Cave faced approximately north and was about  $\frac{1}{4}$  mile from the ocean. It was found to be approx 15 feet long and twelve feet high and pear shaped in cross section, the apex being at the top and broadening to about 4 feet at its concave base. One could see directly from the entrance to the back and it was one of the most open of caves containing bats that have been visited so far. About 20 of this species were seen in the back of the cave in a pothole in its top. They flew when approached and only four were obtained. Two flew into a long crevice at the caves rear but escaped by us. The floor of the cave contained many droppings and its walls were damp from urine in several places about 3 feet in diameter. Large wings of flying insects were visible on the floor, but our guide said that the cave was also visited by bats of a larger size.

Put up one of four caught — ♂ #312.

June 6 1 mi N. Cabo San Lucas, 20<sup>±</sup> ft, Baja California

One shot by Murray last night as it was flying





Quast  
1948

Balantipteryx plicata

2

June 6 1 mi N. Cabo San Lucas, 20<sup>+</sup> ft, Baja California  
along evergreen ledge by camp. It was obtained  
about 7:15 P.M.





Quast  
1948

Mormoops megalophylla

May 4  $\frac{1}{2}$  mi south of Mulege 100+ ft Baja California

~~thunderstorm~~  
Six or eight caught by cave in mountainside  
about  $\frac{1}{4}$  mile ~~north~~ south of the mission at Mulege.  
The one specimen I put up was a male (#13).  
The Mormoops were associated with Leptonycterus (?)  
- put up by Dr. Benson, and Macrotus californicus.  
Bats were in second room of cave (see journal pgs.  
48 + 49 for description).

June 24 <sup>Same</sup> Location Revisited above cave this morning and  
found only one of this species. One Leptonycterus  
and about five Macrotus californicus were  
caught, but the latter were released. The cave  
had far fewer numbers of bats in it this  
time, only about 50 Macrotus californicus  
being seen and only one of Mormoops  
megalophylla and Leptonycterus each (those caught).





Querst  
1948

Macrotus californicus

1

April 17 Cerro Prieto 30 ft 20 mi SSE Mexicali Baja Calif.

One caught by Dr. Benson in abandoned bamboo shack 50 yds from irrigation ditch & situated in mesquite thicket. Bat was confused by flashlights (caught approx 10:30 PM) for it did not fly out of the large holes in the walls of the shack but circled within for about 5 minutes while Dr. Benson tried to net it. It was caught last night after seeing a few scattered large bats flying at dusk.

April 29 Mission San Ygnacio 500 Baja California

Three caught by Dr. Benson in buildings attached to the mission at 10:15 P.M. to night. Specimens were hanging from the domed stone roof singly.

Three more caught (11:00 P.M.) by Tevis & myself in same stone domed room. Were hanging from roof. About five in all were in the room. Specimens put up by Dr Benson, Tevis & Murray.

April 30 9:00 P.M. Three Macrotus found hanging in unused room with two openings to outside. They were very adept at flying up to the stone roof and hanging there, wings separated from the body and hanging parallel to each other, while they gazed downward and occasionally wiggled their ears. One





Quast  
1948

Macroton californicus

2

April 30 Mission San Ignacio 500 ft. Baja California  
was captured in a hand net by Murray  
and we took it outside to see if it could  
take off from level ground, having heard  
that some bats need to drop to start  
flying. The Macroton was placed on flat  
ground and it immediately took off  
without ~~so~~ <sup>any</sup> apparent difficulty, although  
it must have been tired from being  
pursued about a small room for five  
minutes. The three Macrotons were in the  
same room that *Myotis yumanensis* were  
captured in last night. Very little if  
any eyeshine was detected in the light  
of the flashlight from the bats about 5 ft  
away.

May 5 ~~Bahia~~

May 4 <sup>1</sup>/<sub>2</sub> mile S Malegash 100 ft. Baja California  
(Written at Bahia's Concepcion) Ten or twenty  
taken by group in large cave in back of  
mission. Associated with *Mormoops megalophylla*  
and *Leptonycteris*. Bats were hanging in second  
room of cave about 150 feet from surface. I  
put up three males (#128, 129, 130).

May 20 San Antonio, 1000 ft., Baja California  
about 20 seen in large mine about 2 miles  
by road back towards Trujillo. They were  
hanging in a spot about 50 yards from the





Quast  
1948

Macrotnus californicus

3

May 20 ~~San Antonio, 1000 ft, Baja California.~~

entrance and in a place where the air could be felt to be circulating. Upon being frightened at our approach all but four of the specimens flew back to an inaccessible part of the mine. Four flew towards the entrance, three of which were captured by the group later.

May 20 1 mile E. of San Antonio, Baja California

About 80 of this species caught today in a mine at about this location. The mine is situated in a hill covered with Palo blanco trees and occurs where the general direction of the road changes from about East to South on the east side. The mine was composed of a horizontal tunnel at road level with several blind passages leading off it and a main vertical ( $45^\circ$ ) passage that led from the main horizontal shaft to an opening in the hill about 200 ft higher than the first one. Near the upper opening are three blind passages in which the bats of this species and also 'Leptonycteris' were caught. Both types were found in the same passages but they were disturbed when we reached them. They were in the passage closest to the outside on the upper level when discovered (About 5:30 P.M.) and flew to the interior when disturbed by a shot by Dr. Benson.

Both types were captured by chasing them





Quast  
1948

Macrotus californicus

4

May 20 ~~1 mi. E. of San Antonio, Baja California~~  
into a blind tunnel and then closing off the  
entrance with a large mosquito net braced  
with hand nets and sticks.

I put up five males (#230-234 incl.) of  
the 20 ♂ + 35 ♀ living the next morning.  
(written May 21)

When a number (approx. 8) of the *Macrotus*  
were released the following morning they made  
attempts to group together, two following  
another lead through the sunlit brush already  
quite warm from the sunshine. They made  
attempts to hang up in the shady portions of  
large cactus and brush, but seemed quite  
uncomfortable in the morning heat. Several  
of the bats returned to the Dodge in which  
they were kept, <sup>during the night</sup> two actually banging them-  
selves into the closed windows of the cab.  
One was seen flying across a wash about a  
mile down the road at noon when we broke  
camp and left for Buena Vista. Generally  
speaking, the *Macrotus* were definitely lost  
and dismayed by the heat and sunshine.

May 23 Buena Vista, 25<sup>+</sup> ft, 23°38'N, 109°41'W, Baja California

About 300 of this species counted in a cave  
approx. 4 miles S.E. of here (see Journal pg. 75). Of  
these thirty specimens were saved and cataloged  
by Tevis + Murray. The specimens were caught  
and counted by placing a large mosquito





Quast  
1948

Macrotus californicus

5

May 23 Buena Vista,  $25^{\pm}$  ft,  $23^{\circ}38'N$ ,  $109^{\circ}41'W$ , Baja California  
net over the cave entrance and then capturing  
the specimens by hand as they flew against  
the net. Those caught were put outside the  
net excepting those saved. An estimated 50  
remained in the back of the cave when we left.  
The Macrotus were noticed to cluster very  
close together in a tight mass when hanging  
after being frightened. They bite quite severely  
at times, being painful if a sensitive spot  
in the hand is grabbed.

When removed from the sack at camp  
many were noticed to be dead. Many of the  
individuals were bloody from being bitten by  
their neighbors, some dead individuals still  
having their jaws clamped into others with  
such force that two bats would raise when one  
was lifted.

May 24 Las Cuevas,  $23^{\circ}34'N$ ,  $109^{\circ}39'W$ , Baja California

About ten seen in first cave visited and  
several hundred in each of the two following  
caves. (See Journal May 24).

June 2 6 mi N San Jose del Cabo,  $250^{\pm}$  ft, Baja California

Approx. 20 seen in small cave in small cliff face  
100 yards south of camp. The cave is about 20 feet  
deep and of a size just large enough to accomo-  
date Dr. Benson on his hands and knees. The bats  
seemed to be divided evenly between both sexes.  
None taken.





Quast  
1948

Macrotes californicus

6

June 3 Cami Nudo San Jose del Cabo, 250<sup>+</sup> ft, Baja California

Failed to mention yesterday that the *Macrotes californicus* examined yesterday were perspiring. The bats had been flying about the cave, and with the outside heat, small beads of perspiration were seen on their noses and between their eyes.

June 14 Mina Palmar del Medio, 400<sup>+</sup> ft, 4 mi ESE Pescadero, Baja California

About fifteen obtained here this afternoon from an abandoned mine. The mine was composed of a single horizontal shaft and was about 75 yds long, bending in an arc between openings on neighboring sides of a hill. The horizontal shaft broadened in its middle into a vertical stope and was braced with cross timbers and braced with planks in the ceiling. When first seen the *Macrotes* were about 30 feet from the opening, flying back into the mine as they were approached and finally out of the opposite end of the shaft to return to the original entrance behind us. The *M. californicus* were observed to make no noise when flying except the soft fluttering of their wings. When they returned to the first entrance after having flown out of the other end of the mine they hung within thirty feet of the opening and "peeled" back towards the opening and flying out finally, only a few individuals ~~daring~~ daring to fly past us back into the mine. I happened





Quast  
1948

Macrotus californicus

7

June 14 Mina Palmar del Medio, 400<sup>+</sup> ft, 4 mi ESE. Pescadero, Baja California  
to be standing outside of the mine when one group of about 20 of this species was chased out by someone within. I was surprised to see them all group together in a flock and fly over the hill as a unit rather than each individual picking his own way. This grouping tendency was noticed again when Dr. Benson released 7 males and 2 females from those he had caught in the mine; when released one by one, the first bat would circle as if lacking confidence until joined by one or two others, and then, as a group, fly to other sections. These bats fly slowly and quietly and seem to use their eyes and ears a great deal while flying.

June 22 8.3 mi by road N. Campoli, 26°32'N, 111°35'W, Baja California

Liv taken from a small cave in a lava conglomerate cliff 50 yds N. of the road here. The cave was about 10 feet deep and ended in a large crevice in which the bats were found hanging. About 50 individuals in the colony - no other kind were present. The ♀ I put up had one embryo of 26 mm. When the bats were taken out of the sack in which they had been kept one was found to have its tail, uropatagium, and one leg entirely eaten off. A Wood Rat had also occupied the small cave, scattering Cholla thistles about it.





Quast  
1948

Macrotus californicus

8

June 24  $\frac{1}{4}$  mi South of Mulege, 100 $\pm$  ft, Baja California

About 50 seen in the cave visited at this place on our trip southward. The 50 seen this time were a much smaller group than the time the cave was visited before. No specimens of this species taken although 1 Mormoops megalophyla and one Leptonycterus were caught. Specimen put up by Dr. Benson.

June 26 Mina Sol de Mio, Calmalli, Baja California

One netted by Tevis out of a very small group of bats in this mine - see Journal pg 141 for description.





Quast  
1948

Choeronycteris mexicana

1

April 26 Mina La Fortuna, 2350 ft, 2 mi N Laguna Seca Chapala, Baja Calif.

One male put up by myself out of 5 adults and three young caught in mine diggings at 10:30 PM. Yesterday and 6:30 this morning. Bats were in spots completely protected from light and hanging singly. Hanging nearby were Antrozous.

June 26 Arroyo San Luis, 800± ft, 9 mi W. Calmalli, Baja California

One female #439, no embryos and lactating, caught this afternoon by myself in horizontal shaft of mine here (see Journal pg. 138 for description). About four more were caught by others of the group. All of this species were caught in the furthestmost recesses of the mine. Although they were all found in the same area they appear to hang singly.

June 27 <sup>Same</sup> Location One female, #442, and one immature adult caught by myself in the horizontal tunnel of the mine this morning. Three were seen in a side passage near the end of the tunnel (innermost) of which the above two were caught. The immature adult was released. The female contained one large embryo of 30 mm, an interesting fact because of the lactating females and immature adults present. Evidently young are borne over quite a long period of time.





Quast  
1948

Choeronycteris mexicana

2

July 14

---

One female (no emb.) caught by myself on our return visit here. Only two bats were seen here and both turned out to be this species. Both were hiding near the vertical opening into the higher portions of the mine, at about 25 feet from the outside. The miner here says that they move their roosting places often during the cooler nights.





Quast  
1948

Leptonycterus (?)

1

May 4 1/4 mile south of Mulege, 100<sup>±</sup> ft, Baja California

Several caught in cave about 1/4 mile south of the mission at Mulege. Specimens prepared by Dr. Benson.

May 20 1 mi E. of San Antonio, Baja California

About 20 caught this afternoon about 5:30 in an abandoned mine. The mine was composed of a horizontal tunnel with a few blind passages leading from it and another tunnel at an angle of about 45° leading from the horizontal tunnel to an opening about 150 ft higher on the hill. Three blind passages were present near the upper opening, the bats being first seen in the outermost of them. It is possible that they had gathered there preparatory to flying out of the mine at dark. When disturbed by a shot from Dr. Benson most of them flew back into the interior of the mine. A few of this type and Macrotrus californicus were obtained by closing off the outermost passage with a large mosquito net and then catching them by hand. The largest number were captured later by chasing them into another blind passage which was closed off with a mosquito net. Of the five females I put up (#225-229 incl), none had embryos.

June 7 Punta Gasparino, 10<sup>±</sup> ft, 23°16'N, 110°9'W, Baja California

4 Obtained by Dr Benson, Tevis, + Murray in cave by sandy wash between here and Miquerino. Cave





Quast  
1948

Leptonycteris (?)

2

June 7 Punta Gasperino, 10<sup>±</sup> ft, 23°16'N, 110°9'W, Baja California  
was said to be near the ocean. A fisherman near  
here said today that he had seen bats feeding  
on and around blossoms of Cardone, Pitayo,  
and Agave, and also eating one of the plants  
that leaf out after a rain. Perhaps it will  
tie in with this bat.

June 24 1 1/2 mi south of Mexleg, 50<sup>±</sup> ft, Baja California

One caught this morning in second widening  
of cave. It was caught with one Mormoopsa megalophylla.  
About 50 Macrotes californicus were present  
in the cave. Much fewer numbers of all three of  
these species in the cave this time.

June 30 Mina La Zonta, 100<sup>±</sup> ft, 2 mi W. Santa Rosalia, Baja California

Six males and two females caught in this mine  
this afternoon (See Journal pg. 146). One immature  
female and several immature males were in the  
group. Purple droppings (splatters) of possibly  
Cardone fruit were noticed on ~~the~~<sup>mine</sup> floor about  
30 feet in from the entrance - about the place  
where the bats were first seen flying at our  
entrance. Those of this species that were ahead  
of us kept flying before us until we reached  
the end of the tunnel whereupon they hung on  
the ceiling and sides evidently waiting for us  
to make the next move. Several were netted  
here and four more at our exit at the entrance  
- one Macrotes californicus also caught at entrance,





Quast  
1948

Natalus mexicanus

May 24 Las Cuevas, 23°34'N, 109°39'W, Baja California

Approx 40 specimens taken from a cave near town this morning. The *Natalus* were hanging in the first cave visited (for description see Journal pg 86). Hanging nearby were several hundred *Myotis velifer*.

The males of this species have a large muscle-like gland on top of the skull rostrum. It is so large that it changes the appearance of the skinned head considerably and cannot help but be noticed. The females have only a small ligament or fascia in the corresponding position.

May 31 El Chono, 800<sup>+</sup> ft, 2 mi W. Agua Caliente, Cape District, Baja Calif.

About 20 of this species brought into camp yesterday afternoon by boys who had caught them in a irrigation ditch tunnel. Dr. Benham put up several specimens. Color variation of pelage from cream-white to orange in different individuals evidently does not depend upon sex. Both ♂ and ♀ individuals were found in both extremes.

June 7 Punta Gasparino, 10<sup>+</sup> ft, 23°16'N, 110°9'W, Baja California

One netted by Murray at dusk at a ranch near here. Area had open water available. The bat was said to have been flying very close to the ground and in a very erratic fashion. Netted at dusk.





Quast  
1948

Myotis californicus

1

May 5 Bahia Concepcion, 13 mi S.E. Mulege, Baja California  
One shot by Dr. Benson last evening at dusk. Bat was feeding over cliffs bordering beach where we were camped.

May 13 Santa Ana, Arroyo de Los Viejos, 25<sup>+</sup> ft, 24°03'N, 110°58'W, Baja Calif.

Two females and five males obtained by group around fresh-water pond in arroyo below house at Santa Ana. Bats were flying about pond, coral, palm and "Mangle Dulce" trees at late dusk. I shot one male (#172). His epididymis glands were located in the uropatagium and swollen. The females done by Tewis were said to contain no embryos. Minimum last night was 51°F.

May 23 Buena Vista, 25<sup>+</sup> ft, 23°35'N, 109°41'W, Baja California

One male and one female caught by land net in house nearby our camp last night (#236, 237). The female had one embryo of 10 mm. This species was seen last night and the night previously flying very close to the house and in and out its low porch and open doors at dusk. The two specimens caught last night were netted in the large central room of the house. Several people have lived in the house for years although all were outside while the bats were flying. I would estimate that there were about 10 individuals in that particular group of bats.

May 27 El Carrizalito, 1400 ft, 5 mi N. Santiago, Baja California

One female (#264) shot last evening at sun-





Quast  
1948

Myotis californicus

2

- May 27 El Carrizalito, 1400 ft, 5 mi N Santiago, Baja California  
set when it was still very light. Specimen was  
flying along brush fence in region where granite  
bouldered hillside meets flat below. It contained  
one embryo of 13 mm.
- May 28 <sup>Same</sup> Location One caught by caretaker here last night  
as it flew over pond by this house. One also netted  
by Murray.
- May 29 <sup>Same</sup> Location One netted yesterday at 8:00 P.M. as it  
was flying over pond at caretaker's house (#270)
- June 22 Santa Rosalillito, 25<sup>+</sup> ft, S.E. end Bahio de Concepcion, Baja California  
One male #434 obtained at the water hole this  
evening at about 11:00 P.M. This specimen was  
very interesting because of the fact that it was  
either very sick or wounded by our shooting  
at a spot near there at dusk. When first seen  
in the brilliant moonlight it was flying like  
a butterfly very slowly and irregularly into  
the small breeze that was blowing and toward  
the water hole. As it flew past me I made  
a strike at it with the net but missed, the  
bat flying off to one side and then into the  
water hole. I turned on the flashlight and  
watched the specimen hover very slowly over  
the water and then fall in after an at-  
tempt to drink. The specimen swam to  
one of the dirt walls, climbed a few inches  
up the side and then fell back into the water.





Quest  
1948

Myotis californicus

3

June 22 Santa Rosalillo, 25<sup>+</sup> ft SE end Bahio de Concepcion, Baja Calif.

I finally obtained the specimen by letting it crawl onto the end of my net which I dipped into the water. On examining the specimen I could find no gunshot wounds, only a slight reddish area on the right forearm.

June 25 Los Martires, 300<sup>+</sup> ft, 23 mi by road NW San Ignacio, Baja Calif.

One male, #434, shot this evening at dusk as it was flying over low brush 100 yards north of the coral. A very strong wind was blowing and the bat appeared to have difficulty in navigating. It has been noticed before and was noticed tonight that this species appears to feed over a wide area and is usually glimpsed only as it is flying by. It seems not to feed in the small areas noticed in Eptesicus fuscus and Pipistrellus hesperus. Several small bats possibly of this species were glimpsed drinking at the long watering trough at this place but they were not obtained due to the wind. The boy at the ranch said that many bats visited the tanks on quiet nights. This bat was feeding singly, no other bats being near at the time it was shot.

June 26 Arroyo San Louis, 800<sup>+</sup> ft 9 mi W Calmelli, Baja California

One ♂ #441, obtained in the mine at this place this afternoon (see Journal pg. 138 for description of mine). Two others were seen in the upper stope section





Quast  
1948

Myotis californicus

4

- June 26 Arroyo San Luis, 800<sup>±</sup> ft, 9 mi W Colmelli, Baja California  
of the mine and one in the horizontal tunnel.  
One small bat, possibly this species, seen flying  
across the arroyo just before dark.
- June 27 <sup>Same</sup> Location Visited the horizontal tunnel this morning but  
saw none of this species.
- July 12 Calaviña, 1850<sup>±</sup> ft, Baja California  
One female #453 obtained by netting over pond  
south of the ranch after dark. Specimen appeared  
to be feeding singly. One other obtained by  
Dr. Benson at the same location in the same manner.





Quast  
1948

Myotis velifer

May 17 Trujillo, 1700 ft, Baja California

See species account of Myotis volans for  
May 17, same location.

May 20 Same Location. One ♀, No Embs, (#217) shot last  
night at 7:15. Bat was flying up roadway  
bordered by Mesquite and bushes 50 yards south  
of camp.

May 24 Las Cuevas, 23°34'N, 109°39'W, Baja California

From five-hundred to one thousand seen in  
first cave visited this morning. Were near  
Natalus mexicanus (see Journal).

May 25 El Carrizalito, 1400 ft, 5 mi N. Santiago, Baja Calif.

Several netted by Tevis as they flew over water  
tank at dusk last night.

June 1 Santa Anita, 250+ ft, Cabo District, Baja California

A group of 100-200 seen yesterday afternoon  
in ceiling corner of unused house in town. Dr. Benson  
caught several of which I put up one male #291.

June 5 San Jose del Cabo, Baja California

Three caught by boys and brought to Dr.  
Benson last night. Were seen feeding after 7 P.M.  
in streets, around the trees, and close to the  
buildings in town.











Quast  
1948

Myotis yumanensis

I

April 30 Mission San Ignacio 500 ft Baja California

Two males caught in stone-walled and roofed room in buildings attached to west end of building. They were caught at 10:30 and 11:00 P.M. <sup>yesterday</sup> and were found hanging singly from the roof. Specimens were prepared by Dr. Benson.

3:00 P.M. 15 caught this afternoon with hand nets in high stone roofed room east of mission proper. The ceiling is of brick and crumbling cement and the bats were in groups hidden in the crevices between the bricks. Shot fired from 22 pistol disturbed a few of them, but the remainder had to be poked out with a long stick. The specimens were cataloged by Dr. Benson.

9:00 P.M. Have just inspected room in which two males were captured last night. None were seen although it was occupied by three Macrotus californicus. Possibly the Myotis were so disturbed by our raiding a nearby roost (above paragraph) about 100 yards distant that they did not go to their accustomed place after feeding.

May 3 Mulige 25<sup>+</sup> ft Baja California

About 40 caught yesterday in crevice between 2 x 12's supporting porch in back of government building here. Of 20 sel-





Quast  
1948

Myotis yumanensis

2

May 3 Nulege 25<sup>+</sup> ft Baja California  
selected at random for stuffing, 19 were females  
with one male. Of the seven bats I put  
up, all female, Two had embryos (no. 117 +  
121 of the series 116-122 incl.)

The beams from which the bats were procured  
are part of a large cement-floored perch  
about 40 yards long and 10 yards wide.  
The beams are about 12 ft off the ground.  
Bats were located yesterday afternoon by  
their squeaking.

Two females were caught by Dr. Benson,  
Murray + Tevis at the jail at dusk last  
evening.

One was caught and two others seen yesterday  
in same room in which the Tadarida mexicana  
were caught. The Myotis were seen to enter a  
small crack in the ceiling in the opposite end  
of the room.

10:00 P.M. Two flew into the room we are  
using at 7:30 P.M. One hid in the ceiling im-  
mediately, but the other was kept flying  
by chasing it with a broom until 8:10 P.M.  
when the others returned with the hand nets.  
At the end of the forty minutes, the bat  
appeared to be tiring, its entire efforts being  
made in finding a place protected enough  
to rest.





Quast  
1948

Myotis yumanensis

3

May 11 Pozo Grande 25<sup>+</sup> ft 25°46' N 112°02' W Baja California  
About 30 seen last evening at water hole  
here. Bats were in a close group flying about  
1 ft or less above the water in the vicinity  
of the pond bordered by willows and containing  
rocks protruding above the surface. The bats  
flew very close together for about 15 minutes  
(7:15 - 7:30 P.M.) occasionally touching each  
other with their wing tips. Specimens were  
obtained by Murray, Tevis, and Dr. Benson.





Quast  
1948

Pipistrellus hesperus

1

April 10 Punta San Felipe, 50 ± ft, Baja California.

Three seen flying westward by camp at 7:00 P.M. this evening. One shot last evening and another this evening (#35 + 36). Bats possibly flying from sea caves and rock crevices of Point. Seen feeding close to ground along beach in pairs and groups of four and five at dusk.

April 11

One seen flying over camp 6:00 A.M.

9:30 P.M.: Pipistrellus started flying towards San Felipe from the hill NE (previously stated as East) of camp at 7:00 P.M. The Pipistrellus came in loose groups, for four or five would pass over in one interval of time with none in the following interval. Later the Pipistrellus were seen feeding ~~at~~ close to the terrain. Two instances were noted in which a probable Pipistrellus circled a person completely at about the level of his waist at a distance of about two feet.

April 14 El Mayor, 30 ft, Rio Hardy, Baja California

One shot flying singly over roadway at 10:30 A.M. by Dr. Benson. Bat did not appear to be feeding and was flying slowly in one direction.

April 17 Cerro Prieto 30 ft 20 mi SSE Mexicali, Baja Calif.

I shot one flying at dusk along border of mesquite trees where they met an open field.





Quast  
1948

Pipistrellus hesperus

2

April 17 Cerro Prieto 30 ft 20 mi SSE Mexicali, Baja Calif.  
Dr. Benson also shot one at the same time 100 yds. distant. The Pipistrellus were not noted until it was quite dark and were feeding when seen. My specimen was not put up because of drying out overnight and blasted condition.

April 19 One shot at dusk (7:45 P.M.) yesterday as it was flying over open field. (♀ #27)

May 3 Mulege 25 ft Baja California  
3♂ + 2♀ shot at dusk by Murray, Tevis, and Dr. Benson in a small rocky canyon above the creek. Dr. Benson said that they were there in very large numbers. Specimens were put up by Dr. Benson under this date.

May 8 Rancho Cadeje SW end Bahía Concepcion, Baja California  
One male shot last evening at dusk by Murray. About five others seen, feeding singly.

May 10 San Jose de Comondú 700 ft Baja California  
Two shot by myself last evening between 7:15 and 7:45 P.M. They were feeding among the palm trees of the arroyo floor accompanied by Eptesicus fuscus which started flying about 7:30 P.M. So far I have noticed that the Pipistrellus hesperus is the first bat to ~~be~~ be seen flying in the afternoon, appearing here at sunset. They appear to be very common here. Minimum temp. last night was 56°F. Only one specimen saved (#163).





Quast  
1948

Pipistrellus hesperus

3

May 17 Trunfo, 1700 ft. Baja California

One male and one female (2 Emb. 8 mm) shot at sunset yesterday evening. The species was at its greatest concentration over the wash at sunset, decreasing in numbers seen until half an hour later when none were seen. The bats were feeding around Mesquite trees and up and down the wash below our camp. The Pipistrellus started feeding about 15 minutes before larger species were seen in the air.

Tonight the Pipistrellus appeared at 6:30, feeding around the mesquite trees. The larger bats appeared at 7:00 P.M. It was quite cloudy in the west this evening possibly causing an early appearance of the bats. Two females were shot (#197, 198) containing, each 2 embryos of 7 and 8 mm respectively.

May 18 Same Location. The species did not appear until 7 P.M. this evening possibly because of the complete absence of clouds or overcast at sunset. Dr. Benson shot one. The Pipistrellus appeared at the same time tonight as Desmodus eggs and Eptesicus fuscus, both of which were obtained.

May 25 El Carrizalito, 1400 ft. 5 mi N. Santiago, Baja California

One caught last night as it flew into wires strung across water tanks at dark. Specimen (#253) had two embryos of 10 mm each.





Quast  
1948

Pipistrellus hesperus

4

May 25 El Carrizalito, 1400 ft, 5 mi N. Santiago, Baja California  
Specimen flew into wires stretched one inch  
above water surface at same moment as two  
Eptesicus fuscus.

May 27 <sup>Same</sup> Location. One female (#265) with 2 embs. of 9 mm  
caught at dark last night as it flew over  
water tank 100 yards west of camp. The  
Pipistrellus seem attracted to the swinging  
net, swinging around and following it in  
its course very often.

The Pipistrellus are very common here, they  
being seen in numbers around the large gran-  
ite boulders of the hillside and along the  
roadway and garden near camp. Tevis and  
Murray have netted many over the water tanks  
on the hillside at dusk and dark.

May 28 <sup>Same</sup> Location 8 ♀ netted here last night over the upper  
water tank between 7:30 and 9:30. No other  
bats were caught by myself, but Tevis caught  
one Corynorhinus and a Myotis californicus  
on the opposite side of the tank in the same  
interval. Each time a Pipistrellus was  
caught, several others were noted in the  
vicinity, they seeming to come in associated  
groups.

May 29 <sup>Same</sup> Location One shot 6:45 P.M. yesterday as it was  
flying over cornfield next to camp. (#269)





Quast  
1948

Pipistrellus hesperus

5

May 30 El Chorro, 800± ft, 2 mi W. Agua Caliente, Cape District, Baja Calif.

Several hundred seen at dusk, last night, most of which were flying out of the canyon west of us at great lights. Later a few descended to feed around us, but by far the greater majority were flying to feed in the direction of Agua Caliente.

June 6 1 Mi N. Cabo San Lucas, 20± ft, Baja California

One shot last evening at dusk by Dr. Benson. Time of shooting was about 7:15 P.M. Specimen was flying along evergreen hedge and large Mesquite tree near camp. Nearest hills other than the Point San Lucas are about 2 miles distant (east). We are about 1 mile from the rocks of the point.

June 8 Punta Gasparino, 10± ft, 23°16'N, 110°09'W, Baja California

Several obtained by Murray and Dr. Benson at ranch near here, but in the mountains. Ranch contained open water in the form of a Tinaja.

June 9 San Juan de la Cerradura, 1600 ft W base Sierra Laguna, Baja Calif.

One female with 2 emb (11mm) obtained at 7:15 this evening. #339. Specimen was feeding over trees and bushes on side of hill west of camp. Pelage noticeably lighter than specimens I have obtained before.

June 12 La Laguna, 6200± ft, Sierra de Laguna, Baja California

Shot one male (#353) near forest (100ft) in flat at 7:30 P.M. this evening. The Pipistrellus were feeding with Eptesicus fuscus at the forest border and among and over oak and pine trees.





Quast  
1948

Pipistrellus hesperus

6

June 23 Mulege, 25<sup>±</sup> ft, Baja California

Several hundred seen this evening just after sunset. They were flying at a very high altitude from the mountains south of us towards the palms in the valley floor. For a while a large "cloud" of bats and Nighthawks circled far above our heads to dissolve completely in the next fifteen minutes. The large numbers of Pipistrellus disappeared from the sky to feed among the palms and brush of the canyon floor, their being seen feeding low thereafter. Other species of small bats may have been present but only this species was shot. In the later periods they fed about the same habitat as the Eptesicus fuscus being seen more frequently over the open field with low brush however.

June 29 Santa Rosalia, 10<sup>±</sup> ft, Baja California

One shot by Dr. Benson and one netted by myself as they flew over low brush on flat in back of beach about  $\frac{1}{2}$  mile north of this town. Feeding in same habitat as a larger bat - probably Eptesicus fuscus. Time of obtaining the specimens was at dark (about 8:30 PM).

June 30 San Luciano, 100<sup>±</sup> feet, 5 mi S. Santa Rosalia, Baja California

This species appeared at this place (see Journal pg 148) ten minutes after the first Nighthawk was seen (sunset). They were feeding over the brush by the pond and over a nearby cornfield. Eptesicus fuscus appeared ten minutes later than the Pipistrellus. It was noticed





Quast  
1948

Pipistrellus hesperus

7

June 30 San Luciano, 100<sup>±</sup> feet, 5 mi S. Santa Rosalia, Baja California  
that this species ranged over a larger amount of terrain than the Eptesicus fuscus which confined their range to the limits of the cornfield. Dr. Benson netted one that was flying low over what looked like large Eucelia bushes near the pond.

Saw two of this species chasing each other in close curves and spirals for at least 10 seconds. They were seen over the rock fence bordering the cornfield.

July 12 Cataviña, 1850<sup>±</sup> ft, Baja California

One male and three females obtained this evening before and after sundown. All were shot as they flew up and down the wash west of the ranch. Two of this species were seen flying together down the wash before sundown, their being illuminated by the light of the setting sun. They were definitely associated with each other, one continuously flying up to and darting around the other. After sundown they became much more common and about fifteen were seen feeding about a small mesquite in the wash.





Quast  
1948

Eptesicus fuscus

1

May 10 San Jose de Comondú, 700 ft, Baja California  
Two males (#161, 162) shot last evening just after dusk (7:30 P.M.) They were feeding around palm trees on the valley floor and appeared later than the Pipistrellus hesperus. Minimum temperature last night was 56°F.

May 11 Puerto Grande, 25<sup>+</sup> ft 25°46'N 112°02'W, Baja California  
Two males shot flying over water-hole 200 yards west of town at late dusk. The bats were flying singly about 30 feet above the ~~grass~~ pond and surrounding sand, & willows. They were easily recognized in flight by their higher level of flight and larger size than the Myotis yumanensis. I put up one specimen (#171), the other was found in the morning and put up by Dr. Benson.

May 12 Triunfo, 1700 ft, Baja California  
Three caught by Dr. Benson, Tevis, Murray and myself in an abandoned building in town yesterday afternoon. It is believed that the Eptesicus were foraging in a different place than the Tadarida mexicana and Myotis volans which were situated between doubled 2"x12" supports to a ~~to~~ roof of a 2 story building. The Eptesicus were believed to have been in a crevice between a similar 2"x12" support and the wall, one story lower. Specimens were put up by Tevis.





Quast  
1948

Eptesicus furcatus

2

May 18 Triunfo, 1700 ft, Baja California  
~~munu, unu, unu, unu, unu~~

Shot one ♀ (No Emb., #199) yesterday evening at 7:00 P.M. Specimen was flying alone over small canyon (wash) bordered by brush. Orders were obtained by Murray and Tevis.

May 19 Same Location. 1 ♂ + 2 ♀ shot last evening between 7 and 7:30. The species was feeding low (about 15 feet off the ground) among mesquite and along road leading past camp. One female contained no embryos, the other was so badly mutilated that the skull had to be discarded and embryos could not be looked for. (#209, 210, 211). Others of the same species obtained by Murray and Dr. Benson.

May 20 Same location. Two females shot yesterday between 7 and 7:30 P.M. (#218, 219). Neither had embryos. Bats were flying about 15 feet off the ground and up a roadway bordered by scattered Mesquite and other trees and bushes. One circled my gun barrel several times before it finally flew to Murray who shot it.

May 24 Buena Vista, 25<sup>+</sup> ft, 23°38'N, 109°41'W, Baja California  
~~ununu, unu, unu, unu, unu~~

Two females, one containing 2 emb, 4 mm, shot last night at dusk as they flew up the roadway west of camp. They were flying at tree level (Ironwood, Mesquite, Lumbui, etc) and at the height of about 8 feet. Both chattered loudly when hit by shot from the half-load.





Quast  
1948

Eptesicus fuscus

3

May 25 El Carrisalito, 1400 ft, 5 mi N. Santiago, Baja California  
~~San Juan de la Barranca, 1600 ft, W. base Sierra Laguna, Baja Calif~~  
Three females (#254, 255, 256) caught by stringing fine wire over open water tanks last night. The ~~bat~~ bats presumably were flying low over the water to drink. All were caught there well after the sun had set and at about the moment when full dark sets in. All three fell into the water after hitting the wires stretched tightly about ~~ten~~ <sup>an</sup> inch above its surface and were swimming towards the sides. A Pipistrellus hesperus and two of the Eptesicus hit the wire simultaneously and were caught. Two of the specimens had two embryos apiece of 7 mm and 5 mm.

June 10 San Juan de la Barranca, 1600 ft, W. base Sierra Laguna, Baja Calif  
~~San Juan de la Barranca, 1600 ft, W. base Sierra Laguna, Baja Calif~~  
Shot two males about 7:30 PM yesterday (#340, 341). As usual the Eptesicus appeared later than the Pipistrellus hesperus which were seen 10-15 minutes earlier. The Eptesicus were flying across the flat area in which we were camped at a height of about 20 feet and in a straight line when obtained. At late dusk it was noticed that they fed much lower in the air, circling around the leafless trees and bushes at a 6-10 ft level. They make a "clicking" noise, similar to Pipistrellus hesperus but more slowly and loudly, when feeding.

June 12 La Laguna, 6200+ ft, Sierra de la Laguna, Baja California  
~~San Juan de la Barranca, 1600 ft, W. base Sierra Laguna, Baja Calif~~  
One shot at dusk last night (#347) and also





Quast  
1948

Eptesicus fuscus

4

June 12 La Laguna, 6200<sup>±</sup> ft, Sierra de la Laguna, Baja California  
the night before last (#342), both in the same location and at about 7:30 P.M. This species feeds first in and over the oak and madrone forest at the margin of the flat, venturing to feed below tree level on the flat at late dusk and dark. Are quite common here.

June 17 Pozo Grande, 23°46' N, 112°02' W, Baja California

Five shot (3 ♂, 2 ♀) (#371-375 incl.) this evening between 7:30 and dark. The females contained no embryos. The first bat was seen at 7:30 and it was this species. All were feeding about and up and down the wash containing the large pool. They fed at a height of about 6 feet to 20 feet, flying into the wind and making the characteristic "chipping" sound as they moved slowly above the ground. Shooting at them seems to bother them but little, the usual occurrence, if they were not hit, is for them to dive and catch the shotgun wad in mid-air. Several times it has happened that after shooting at and missing one of this species it has dove down and flown within a few inches of the smoking barrel, one even hitting it with its wing last night. If not killed when hit by the shot this species will lie quietly on the ground with wings folded close to its body until touched or picked up whereupon it assumes a menacing attitude with wings spread





Quest  
1948

Eptesicus fuscus

5

June 17 Pogo Grande,  $25^{\circ}46'N$ ,  $112^{\circ}02'W$ , Baja California  
~~indistinctly, indistinctly, indistinctly, indistinctly~~  
~~spread~~ widely apart, head turned back with jaws  
opened widely and a furious chattering accompanying  
them. If two of this species that are wounded and  
excited are brought close together the result is usually  
a furious grappling and biting with loud chattering,  
the two bats having to be pulled apart. Some are  
so furious when hit that they will attempt to  
stand up to bite the approaching hand. This  
could not be called bluffing but sheer aggressiveness.

June 22 Santa Rosalilita,  $25^{\circ}$  ft S.E. end Bahia de Concepcion, Baja Calif.  
~~indistinctly, indistinctly, indistinctly, indistinctly~~

Five or six of this species appeared over the  
coast after 7:40 P.M. When first seen two of  
them were flying toward us and then veered to  
our right to feed among the tall Cardones and  
over the coral and leeward side of a  
Palo San Juan and a Mesquite that are assoc-  
iated with the coral. The one *Eptesicus* I shot  
kept feeding over the coral and its route  
extended slightly past the two before mentioned  
trees set on opposite sides of the coral. A  
small bat had also taken up the same  
route of feeding and kept flying back  
and forth in the area. This species, *Eptesicus*  
*fuscus*, quite obviously has the tendency to  
establish favorite feeding areas and begins  
working them before dark. The specimen ob-  
tained #433 was a female with no embryo.





Quast  
1948

Eptesicus fuscus

6

June 22 Santa Rosalita, 25<sup>+</sup> ft, S.E. end Bahia de Concepcion, Baja  
California  
Murray netted one of this species that was feeding among the Cardones and Dr. Benson and Tervis shot several in the wash south of the coral.

June 23 Mulege, 25<sup>+</sup> ft, Baja California  
California

One female, #436, with two embryos of 19mm each, netted after dark tonight. Ten or twelve of this species had established feeding routes over a trail bordering large olive trees and a few shorter Mesquite trees. On the average they fed at a 10 to fifteen foot height and were flying lower than the tree tops. The "clicking" noise of their flight was obvious throughout the entire period that I attempted to net them. It seems as though this habit of feeding over a more or less clear and straight area bordering trees harboring the insects on which they feed is the best way to get ample food with the smallest expenditure of energy in flight.

June 25 Los Martires, 300<sup>+</sup> ft, 23 mi by road N.W. San Ignacio, Baja  
California

One male seen and shot this evening at dusk. The wind was blowing strongly and the bat was seen feeding close to the tops of small bushes in the desert sand among a few Cardones. I walked about 50 yards to the area in which I had seen it feeding and obtained it.





Quast  
1948

Eptesicus fuscus

7

June 25 Los Martires, 300<sup>±</sup> ft, 23 mi by road N.W. San Ignacio, Baja Calif.

There are no mountains or hills in this vicinity, the nearest ones being visible at a great distance to the east. A cement water tank and a long cement watering trough, both containing water, and a windmill exist at this place. One Myotis californicus was obtained shortly after this specimen was shot. Bats were very scarce this evening.

June 30 San Luciano, 100<sup>±</sup> ft, 5 mi S. Santa Rosalia, Baja California

Shot three and Dr. Benson <sup>one</sup> two of this species this evening over a cornfield at dusk (see Journal pg. 148). All four were females and one of my specimens (#444, 445, 446) had two embryos, one had one embryo and the other none. The feeding areas of this species were confined to the limits of the cornfield (approx. 150 x 250 ft) and we had to go into the area to shoot them, thus leaving the boundary but rarely. Pipistrellus hesperus were also feeding over the cornfield but did not limit themselves to its limits. None were seen drinking at the pond of this species.





Quast  
1948

Lanius borealis

May 26 El Carrizalito, 1400 ft, 5 mi N Santiago, Baja California  
One netted by Murray as it flew over water  
tank 100 yards west of camp last night at dark.





Quast  
1948

Dasypterus ega

1

May 18 Trunfo, 1700 ft, Baja California

One shot by Dr. Benson last night at 7:00 P.M. Specimen was flying near roadway and near mesquite trees. Specimen prepared and cataloged by Dr. Benson.

One shot by Murray near Mesquite trees in canyon bottom at about 7:15 this evening.

May 25 El Carrizalito, 1400 ft, 5 mi N. Santiago, Baja Calif

One shot by Murray last night at dusk as it was flying over a cornfield nearby our camp.

May 27 <sup>Same Location</sup> One shot by Dr. Benson as it was gliding down the hillside towards the flat below at dusk yesterday.

May 29 <sup>Same Location</sup> One netted by Dr. Benson at 8:30 last night as it was flying over pond near caretaker's house (see map pg. 91 of journal).

May 30 El Chono, 800<sup>±</sup> ft, 2 mi W. Agua Caliente, Lower District, Baja Calif

Shot two yesterday at dusk over irrigation dam at this place (#272, 273). Both were females and had two embryos apiece. These were flying much lower than the *Tadarida femorosacca* obtained at the same time.

It is believed that one of this species hit wires strung over pond just above dam at 9:30 P.M. I turned the light on it and it swam to the opposite side and was lost in the tules. They appear to be good swimmers.





Quast  
1948

Dasypterus ega

2

May 31 El Chorro, 800<sup>+</sup> ft, 2 mi W. Aguahachente, Cape District, Baja Calif

Four females (#279-282 incl) shot last night at dusk and dark (7-7:45 PM). They had two embryos apiece of 8mm, the other was badly mutilated by gunshot and embryos could not be determined. Specimens obtained were flying about 20 feet around perimeter of pool above dam and also trees growing in walls of canyon above dam. Other specimens obtained by Teves, Murray, and Dr. Benson.

June 1 Santa Anita, 250<sup>+</sup> ft, Cape District, Baja California

Three males (#288, 289, 290) shot flying across field in arroyo bottom last night at dusk. First one seen at 6:45. Came out before the Pipistrellus hesperus here. Palms present in great numbers here - a possible hiding place during the day.

June 2 6 mi N. San Jose del Cabo, 250<sup>+</sup> ft, Baja California

One male and two females shot yesterday at dusk. (#292, 293, 294). This species appeared at 6:45 P.M., approximately 15 minutes before the small bats (Pipistrellus size) appeared. Both females had two embryos apiece of 4 and 3 mm - noticeably smaller than those of El Chorro.

Murray watched one alight in a palm tree and shot it after chasing it out again.

About ten chased out of palm trees near camp this morning by Dr. Benson. About four were shot by the group as they flew from the palm trees





Quast  
1948

Dasyspermus ega

3

June 2 6 mi N. San Jose del Cabo, 250<sup>+</sup> ft, Baja California  
~~San Jose del Cabo, Baja California~~  
and turned out to be this species again. Upon reflecting on the places we have obtained this species, each has had palm trees in the vicinity.

June 5 San Jose del Cabo, Baja California  
~~San Jose del Cabo, Baja California~~

Many seen flying in town and around palms at outskirts of town last night. These bats are early risers and begin to fly at sunset, usually 15 minutes before other species are seen. Seen first over palms north of town, but later flying up and down the streets about 25 feet off the ground. This species feeds much higher than the smaller ones, flying above roof level while the smaller species dart to and fro in the streets.

June 12 La Laguna, 6200<sup>+</sup> ft, Sierra de la Laguna, Baja California  
~~La Laguna, Sierra de la Laguna, Baja California~~

One shot by Tervis last night at dusk. Were seen this evening flying in the western half of the flat between 7:15 and 7:30 but none were obtained by myself although Tervis shot one. It was noticed that this species prefers to feed over open ground, flying slowly and performing intricate maneuvers in its feeding. It does not fly low over the ground but maintains a height of from 20 to 60 feet except when pursuing an insect downward. Its flight is in large circling arcs and here much different than the straight and fast flying Tadarida mexicana.





Quast  
1948

Dasypterus ega

4

June 23 Mulege, 25<sup>+</sup> ft, Baja California  
~~murphy, murphy, murphy~~

Several shot by Dr. Benson and Tevis this evening as they circled around palm trees in valley after sunset.





Quast  
1948

Corynorhinus

1

May 26 ~~El Carrizalito, 1400 ft, 5 mi N. Santiago, Baja Calif.~~

Three netted by Tevis last night at late dusk as they flew over an open water tank on the side hill west of camp. He said that all three were caught in as many minutes, none being caught beforehand or after that last night.

May 27 <sup>Same</sup> Location One netted by Dr. Benson last night at dark (about 8:15 PM) over water tank 100 yards west of camp. Specimen was accompanied by several others, but no others were caught.

May 28 <sup>Same</sup> Location One netted by Tevis last night at 8:40. Two were seen at once over the upper water tank but the two of us caught only the one. One was also netted by Murray about a half hour earlier, down at the tank below.

June 26 ~~Arroyo San Luis, 800+ ft, 9 mi W. Calmali, Baja California~~

Three caught in horizontal tunnel of mine here (see Journal pg 138 for description) by the group. The specimen I caught #440 was a female containing no embryos. It was procured about half way down the tunnel and was hanging face downward (against the rock) from the jagged rock of the ceiling [about  $5\frac{1}{2}$  feet high]. Its ears were tightly curled against the side of its head and it was in a torpid condition when caught despite the fact that three of the group had passed beneath it with flashlights and equipment. Another was picked off the ceiling by Dr. Benson as





Quast  
1948

Corynorhinus

2

June 26 Arroyo San Luis, 800<sup>±</sup> ft, 9 mi W. Calmelli, Baja California  
the group was leaving the tunnel. This bat was  
about 20 feet closer to the entrance than the one I  
obtained. It too was in a torpid condition with  
ears rolled against the sides of its head.





Quast  
1948

Antrozous minor

1

April 26 Mina La Fortuna, 2350 ft, 2 mi N Laguna Seca, Baja Calif.

Seven females and one male caught by this group in the mine last night and this morning. Of these I put up one male and one female (#95, 96). Bats were well within the caverns in places completely protected from light. Two of the females had one young apiece, clinging to them. Bats were caught at 10:30 last night and at 6:30 this morning. Hanging nearby were Choronycteris mexicana.

April 30 Mission San Ignacio, 500 ft, Baja California

10:30 P.M. One male captured just now by Tevis in stone room with arched stone ceiling. Same room in which Macrotus californicus are seen hanging every night. It is the only bat of this species seen here so far. Put up by Murray.

May 25

El Carrizalito, 1400 ft, 5 mi N Santiago, Baja California

4 ♂ caught in unfinished two story building last night at about 9 P.M. (#258-261 incl). They were found hanging in the corner of the ceiling of a 2 story stair well.

This building is a very popular place for Antrozous, six or eight being seen in the second story ceilings every night. They are usually clustered together in a corner, and the more popular spots are stained brown from the dirt on their fur. Their droppings





Quast  
1948

Antrozous mexicanus

2

May 25 El Carrizalito, 1400 ft, 5 mi N. Santiago, Baja California  
~~are thick on the floor below these spots.~~  
are thick on the floor below these spots.

So far the Antrozous have been quite easy to catch while flying, seeming to forget their escape ways when chased with the hand net. They form quite a contrast with the Macrotus californicus which so far have been seen only in one small room on the ground floor and which fly immediately to and through the exit, as if they had inspected the escape passages well before alighting.

May 27 <sup>Same</sup> Location One male caught last night ~~at~~ in second story stair-well of the building in which we are camped. Testes were enlarged, same for all specimens taken here, and vasa deferens enlarged and in uterataquim. Specimen no. 267

May 28 <sup>Same</sup> Location Several more caught by Dr. Benson and Murray in house yesterday

May 29 <sup>Same</sup> Location One netted last night about 9:30 P.M. as it was chased out of its perch in the ceiling of the second-story stair well. One of this species netted by Tavis as it flew over upper tanks (see map pg. 91 of Journal) at 8:30 P.M. yesterday.

June 22 Santa Rosalillito, 25<sup>+</sup> ft, SE end Bahía de Concepción, Baja Calif.  
~~are thick on the floor below these spots.~~

Three lactating females netted over water hole between 9 and 11:30 P.M. tonight. see Journal pg. 132 for description of locality. It was observed





Quast  
1948

Antrozous minor

3

June 22 Santa Rosalillito, 25<sup>+</sup> ft, S.E. end Bahia de Concepcion, Baja Calif.  
that several of this species would appear over the waterhole at once and also that this species would circle within the pit in a fixed manner before drinking. It was easy noting them as soon as they had circled twice and indicated the manner in which they would circle again. In contrast, the smaller bats (*Myotis californicus*?) would fly down into the pit immediately and fly back and forth several inches above the surface making an audible noise when they hit the water to drink.





Quast  
1948

Tadarida femorosacca

1

May 30 El Chorro, 800<sup>+</sup> ft, 2 mi W. Agua Caliente, Cape District, Baja Calif.

Seen from dusk to dark last night. Were flying very high early in the evening, but descended to about 50 feet above the ground just before dark. Were feeding in company with Pipistrellus hesperus and Dasysternus ega. Dr. Benson shot 4 Tadarida femorosacca and Tevis one last night.

The canyon proper above the dam was better for shooting this species than the broader, flatter portions near and ~~below~~ below camp, the bats flying much lower and circling more in the narrow canyon. T. femorosacca is distinctive in its large size, narrow wings, and rapid speed of flight.

May 31 <sup>Same</sup> ~~Location~~ One male and three females (#283-286 incl) obtained last night between 7 and 7:45. Specimens were feeding about 40 feet high above the pond above the dam here.

June 1 Santa Anita, 250<sup>+</sup> ft, Cape District, Baja California.

About five seen flying over field in arroyo bottom yesterday at dusk. This species was flying very high (well above tree level). Dr. Benson shot one. Field bordered by Mangoes, Palms + Mesquites.

June 4 6 mi N. San Jose del Cabo, 250<sup>+</sup> ft, Baja California

One secured from rock crevice by Dr. Benson this morning. Specimen was found in crevice formed by exfoliating layer of a large spherical granite boulder in rock outcrop 200 yds south of camp. Probably one of the two of this





Quast  
1948

Tadarida femorosacca

2

June 4 6 mi N. San José del Cabo, 250<sup>+</sup> ft, Baja California  
species I saw flying up the wash yesterday  
at dusk. Specimen was found next to a  
medium sized colony of Myotis velifer. The  
accumulated droppings from the two species had  
forced them into one small section of the crevice.  
Crevice was about 5 yds east of cave containing  
Macrotona californica.

June 6 1 mi N. Cabo San Lucas, 20<sup>+</sup> ft, Baja California

Shot two males and one female last night at  
dusk. Specimens were flying over cleared field near  
camp and were flying quite high. Many long  
and spectacular dives were noted, the species  
coming within 10 feet of the ground, and then  
resuming flight direction and slowly climbing  
up to the original altitude. This species does  
not circle in flight as many others but seems  
to prefer to fly in a straight line high above  
the ground, and then to dive upon its prey.  
The original direction of flight is almost always  
resumed. This species flies fast and is difficult  
to shoot when flying with the wind. Specimens  
no 313, 314, 315.

July 12 27 mi N.W. Punta Prieta, 2000<sup>+</sup> ft, Baja California

One male #451 shot last night as it flew over  
camp at late dusk. This specimen was first noticed  
by the high, almost inaudible, note it was emitting  
as it flew singly, high in the air, over camp.





Quast  
1948

Tadarida mexicana

1

April 10 Punta San Felipe, 50<sup>±</sup> ft, Baja California

Two caught by Dr. Benson that had flown into our skinning room separately at 10:30 and 11:00 P.M. while we were working on specimens.

April 11

Several seen flying over beach at dusk. One shot by Murray. The Tadarida seem to fly singly and generally higher from the ground than the Pipistrellus hesperus, and are easily recognized as different from the Pipistrellus by their larger size and slower wing-beat.

April 16 Cerro de Centinela 300 ft 13 mi WSW Mexicali, Baja California

One seen flying ~~of~~ over alluvial materials of desert after sunrise by Dr. Benson.

April 19 Cerro Prieto 30 ft 20 mi SSE Mexicali, Baja Calif.

One female shot as it was flying at about 50 ft over open field. Shot where field borders mesquite between 7:30 and 8:00 P.M. last night. (# 78).

April 30 Mission San Ignacio 500 ft Baja California

46 caught, 19 ♂ 27 ♀, in the old mission. The bats were found above the doorways in crevices formed by the wood moulding and in the attics of buildings adjoining the mission. The attics were inaccessible, but the bats were procured by poking through holes in the stone walls with consequent pouring out of the bats through the entrance to their roost. Hand nets were held over the holes





Quast  
1948

Tadarida mexicana

2

April 30 Mission San Ignacio 500 ft. Baja California  
~~mission San Ignacio 500 ft. Baja California~~  
and the bats poured into them like a waterfall.  
No other species of bats were encountered with  
the Tadarida.

I put up ten specimens (#103 through 109). The  
specimens were obtained about 6:00 P.M. No embryos  
were found in the females. Other specimens  
put up by Dr. Benson, Tevis, + Murray.

9:00 P.M. One just captured in unused  
room with 4 openings to outside. Specimen  
was released. Was in room next to and  
continuous with a smaller room containing  
three Macrotes californicus. The Tadarida  
began flying at sundown (7:00 P.M.) and  
were flying singly and appeared to be  
feeding.

Their chattering can be heard starting  
early in the afternoon from their hiding  
places within the walls of the old mission.

May 2 Mulege 25<sup>+</sup> ft. Baja California  
~~Mulege 25<sup>+</sup> ft. Baja California~~

Two ♂ and 20 ♀ caught in crevice between  
a 2 x 12 and plastered wall at 12 noon  
today. All means of getting the Tadarida  
out of the crevice were used from poking  
at them with a hooked wire to attempting  
to smoke them out with an oil smudge  
all without success. Finally results were  
obtained by pounding on the 2 x 12 with





Quest  
1948

Tadarida mexicana

3

May 2 Mulege, 25<sup>±</sup> ft Baja California  
a hammer, the four of us netting 22  
with the hand net. I put up 6 specimens  
(# 110-115 incl.) of which 5 had embryos  
ranging from 3 to 6 mm. It is interesting  
to note that the females I put up from  
San Ignacio contained no embryos.

May 17 Truinfo, 1700 ft, Baja California

Approximately 100 specimens obtained yesterday  
from 2x12 supports to second-story ceiling of  
abandoned building in town. Five or six times  
as many *Tadarida* were roosting there. They  
roosted in the long cracks formed by doubled  
2"x12" supports for the ceiling and were routed  
out and captured by stirring in the crack  
with a thin stick while holding the net under-  
neath. The bats dropped by the dozen into  
the hand net held below. Roosting with the  
*Tadarida*, in the same crevice, were a few  
*Myotis velifer*.

The bats were hung in a large burlap  
sack in a Mesquite tree in camp last night  
preparatory to putting up as specimens this  
morning. We awakened to find only 10 rem-  
aining in the sack, the remainder having escaped  
through holes chewed in the sack last night.

The remaining specimens were cataloged  
by Dr. Benson.





Quast  
1948

Tadarida mexicana

4

May 17 Trinidad, 1700 ft, Baja California

Several were seen flying over camp at dusk last evening (?).

May 24 Buena Vista, 25<sup>+</sup> ft, 23°38' N, 109°41' W, Baja California

One female shot last night as it flew down the road. Specimen (#240) had one embryo, 8 mm long. This bat was shot at at late dusk as it flew down the roadway which was bordered by Ironwood, Palo Verde, Cholla, Lumboi, Frutia, and other shrubs. Specimen was flying at about 6 feet off the ground and very fast.

May 31 El Chorro, 800<sup>+</sup> ft, 2 mi W. Agua Caliente, Cape District, Baja Calif.

One shot last night flying over pond at dawn at dusk. #287. Was feeding about 1.5 feet above the water level in company with Pipistrellus hesperus, Tadarida ferox and Dasypterus egy.

June 2 6 mi N. San Jose del Cabo, 250<sup>+</sup> ft, Baja California

Several shot last evening at dusk by Dr. Benson and Murray.

June 12 La Laguna, 6200<sup>+</sup> ft, Sierra de la Laguna, Baja California

One shot last night at dusk by Dr. Benson. Shot one female this evening at about 7:30 as it was flying over center of flat north of camp. This species and Dasypterus egy seem to prefer the same habitat to feed, namely unobstructed flight terrain. This species feeding by flying more or less in a straight line the Dasypterus in tight arcs and difficult maneuvers.





Quast  
1948

Tadarida mexicana

5

June 13 Todos Santos, 50<sup>+</sup> ft, Baja California

Shot two females (#357, 358) this evening at dusk. This species was feeding over sugar-cane field and stream about 200 yards west of the buildings of the main part of town. These were flying at about a thirty foot level and were mistaken for the larger Tadarida femorosacca by the group. Also flying were Dasypterus ega and a small bat. Early in the twilight time both the Tadarida and the Dasypterus were seen over the cane fields, but as darkness approached were noticed to leave off foraging over the field and concentrate in a small area over a small stream for crugating between palm trees and others. These two species of bats evidently have a set pattern for feeding each night. One of the Tadarida shot by myself was very black, evidently from roosting in a chimney.





Quast  
1948

Lepus californicus

1

April 11 Punta San Felipe, 50<sup>±</sup> ft, Baja California

One seen on sand near gulches S.W. of camp. The rabbit quickly ran to a gully and disappeared from sight. The same rabbit, presumably, was jumped farther down the gully. There are numerous rabbit signs on the desert among the Ocotillo and creosote.

April 18 Cerro Prieto, 30 ft 20 mi SSE Mexicali, Baja California

Two seen this morning at 6:00 A.M. Were jumped from mesquite border of lava projection into mud flat

April 20 Alaska, 4400 ft Baja California

One seen approx. 2 P.M. in sage brush and pinon pine association.

April 28 30 mi SE Mesquital, 600 ft Baja California

One female shot at 7:00 A.M. this morning as it crouched motionless, ears against its back, beneath a greasewood bush. (#100) No embryos were found.

Many others have been seen between here and Mesquital.

April 29 Mission San Ignacio, 500 ft Baja California

One seen by Dr. Benson about 30 miles north of here.

May 5 Bahia Concepcion, 13 mi SE. Mulege, Baja California

One shot by Dr. Benson on road between here and Mulege.





Quast  
1948

Lepus californicus

2

June 2 6 mi N. San Jose del Cabo, 250<sup>+</sup> ft, Baja California

Shot one female this morning at border of prickly pear patch 100 yds south of camp. Female was lactating, but contained no embryos, enlarged spots in the uterine tubes containing nothing but globules of jelly 10 mm in length.

June 8 Punta Gasparino, 10<sup>+</sup> ft, 23°16'N, 110°09'W, Baja California

Common here. One shot by Dr. Benson.





Quest  
1948

Sylvilagus audubeni

April 17 Cerro Prieto 30 ft 20 mi S.S.E. Mexicali Baja Calif  
One seen in mesquite thicket at base of  
Cerro Prieto at 9:30 A.M.

April 18 Two seen this morning in dense mesquite thicket  
100 yds from lava hillside at 6:00 A.M.





Quast  
1948

Sylvilagus bachmani

1

April 25 12½ mi by road south of El Marbol 2200 ft Baja Calif

Four seen last evening while setting out traps, all probably being adults. Two were seen this morning about 7 AM, well after sunrise. The female and its offspring were feeding and sitting near and in the shade of a large granite boulder within 10 feet of sage brush. The rabbits were watched for about five minutes from a distance of 30 feet and did not detect me although I was in full view and fully lighted by the morning sun. The adult would sit and then wander in the shade of the boulder, digging in the sand beneath the sage brush while the young rabbit would frolic in and out of the bushes and play in the sunlight. The young rabbit would dash up to the adult and then turn and dart into the brush, returning in an instant to the sunlight where it would stop motionless. It would then either sniff at the sand or repeat its play. The adult meanwhile continued digging and watching, motionless.

I left and returned in about fifteen minutes and shot the young and I believe the same adult. Neither were kept as specimens, the young being too small and





Quest  
1948

Sylvilagus bachmani

2

April 25 12½ mi by road south of El Marmol 2200 ft Baja Calif  
~~immature specimen~~  
the adult too mutilated by gunshot. We  
had them both for breakfast.

Dr. Benson shot a immature of the  
same size and apparent age and put  
it up as a specimen.

All the rabbits seen were within an  
area of 100 yds. radius both last night  
and this morning.

April 28 30 mi S.E. Mesquital 100 ft Baja California  
~~immature specimen~~

Common here. One male shot after sun-  
rise this morning (6:30 A.M.) Specimen was  
crouched under a large bush watching me.  
(#99). Dr. Benson shot one last night.





Quast  
1948

Citellus aticapillus

May 9 San Jose de Comondú 700 ft Baja California

Three seen in boulders along road leading into town from the N.W. Dr. Benson shot one in boulders west of there this morning.

May 11 Pozo Grande 25<sup>+</sup> ft 25°46'N 112°02'W Baja California

About five seen in Arroyo Comondú yesterday in region where the arroyo opens into the Magdalena Plain. Dr. Benson shot one there. Vegetation was Opuntia and Pitaya with Mesquite. Squirrels were seen near boulders and stone fence along road.





Quast  
1948

Citellus beecheyi

April 20 Alaska 4400 ft Baja California

One seen in canyon at bottom of Alaska grade yesterday, and one seen today under sage brush on road (old road) to Ensenada about 10 mi west of Alaska. Both times the squirrels were within an area supplied with running water, willows, etc.

May 7 Rancho Cadejo S.W. end Bahia Concepcion, Baja Calif.

One seen in boulders along road 100 yards from shore of bay. Spot was about 5 miles north of here.





Quast  
1948

Citellus lucurus

1

April 11 Punta San Felipe, 50<sup>+</sup> ft, Baja California

One shot and two secured in Schuyler traps by Lloyd Tevis yesterday afternoon about 5:00 P.M. Taken in sandy draw 200 yds west of camp; one in rocks above.

April 29 Mission San Ignacio 500 ft, Baja California

Common from Laguna Secachapala to here. Dr Benson shot two of them today about 20 miles south of El Arco in a scattered creosote region with sand soil.

May 2 Mulege 25<sup>+</sup> ft, Baja California

About five seen along the road between here and San Ignacio.

May 8 San Jose de Comondru 700 ft, Baja California

One shot by Dr. Benson about 15 miles north of here in very desolate and sparsely vegetated lava country.

May 15 4 miles N of La Paz, Sea Level, Baja California

May 15 One female with no embryos (#175) shot at 4:00 P.M. yesterday afternoon. Was shot near shallow gulley in rocky hillside 100 yards east of camp. Plants growing nearby were *Opuntia cholla*, *Lumbric*, *Creosote*, *Mesquite* and *Elaeagnus*. It was still very warm when the animal was seen, the temperature being 105°F at about 1:30 P.M. yesterday. The cactus and bushes are well separated in that region, the intervening spaces being made up of bare fragmented porous lava rock and a little soil.





Quast  
1948

Citellus leucurus

2

May 18 Trunfo, 1700 ft, Baja California

Five or six caught by Tevis this afternoon and yesterday afternoon in Schuyler traps. Traps were set along brush fence surrounding an abandoned cornfield immediately east of camp. Area is in an arroyo and occupies the bottom of it. Sandy soil is present and a few remains of corn stalks may still be seen. Surrounding the area is rocky and covered with small trees and bushes heavily grazed by goats + cattle.

May 19 Same Location. Shot two females (#215 + 216) this afternoon at 1:30. Both were shot as they sat in a brush fence surrounding a small field 200 yards east of camp. Many others were seen on the rocky ground outside of the fence and under heavily grazed brush, but they ran before I could shoot. One of the females had four large embryos, the other none. This species is abundant in this area.

May 27 El Carrizalito, 1400 ft, 5 mi N. Santiago, Baja California

Six or eight seen along road leading east from camp yesterday at about 10:00 PM.

May 30 El Chono, 800+ ft, 2 mi W Agua Caliente, Cape District, Baja Calif.

Several seen this morning in small piled granite boulders in stream bottom by camp.

June 2 6 mi N. San Jose del Cabo, 250+ ft, Baja California

June 2 Very plentiful here around Pichley Bear patch





Quast  
1948

Citellus leucurus

3

June 2 6 mi N. San Jose del Cabo, 2500 ft, Baja California  
200 yds. south of camp. Most plentiful among the  
Prickly Pear but also extend up rocky hill among  
Pitaya dulce and Lumbos. I have yet to hear  
any vocal utterances from these squirrels when  
they are approached. They are less timid when  
they are in the Prickly Pear, some watching  
me for quite a while at 20 feet and seemed  
reluctant to go down their holes (12 noon). Per-  
haps they are accustomed to being bothered by  
the nearness of goats and cattle and have  
found the Prickly Pear protection ordinarily  
requiring no further steps.

June 9 San Juan de la Barranca, 1600 ft, W. base Sierra Laguna, Baja Calif.

One seen and obtained yesterday on boulders  
in rocky wash near camp (#338). Squirrel was  
shot about 1:30 P.M. and was a lactating female.  
This species seems quite scarce in this area.





Quast  
1948

Citellus tereticaudus

April 11 Punta San Felipe, 50± ft, Baja California

Five seen in desert association within 25 miles of San Felipe. Three were in upper branches of bushes (creosote?). None were secured.

April 17 Cerro Prieto 30 ft 20 mi SSE Mexicali, Baja Calif

Two seen in dust and sand of roadway this afternoon. Roadway was bordered by thick mesquite. Individuals were separate and about 100 yds apart.

April 28 30 Mi SE Mexquital 600 ft Baja California

Common in thick brush and cactus  
along roadside between here and Mesquite





Eutamias merriami

April 20 Alaska 4400 ft Baja California

About six seen in one hour's walk among the large granite boulders  $\frac{1}{2}$  mi west of the town. They were very shy and it was impossible to get near enough to them to shoot except on one occasion in which the animal escaped into the rocks after being hit squarely by #10 shot at about 75 feet.

All were seen among the Pinon pines and large granite boulders singly.





Quast  
1948

Perognathus arenarius

1

May 6 Bahía Concepción, 13 mi S.E. Mulege, Baja California  
Six males and one female caught in live traps baited with bird seed last night. Traps were set in sandy area in back of shell beach and below lava rocks. Traps were set among large bushes. All males had enlarged testes and the female one embryo (see catalog #140 to 146 incl.).

May 7 Same Location. Two females and one male caught last night in live traps set among large bushes of "Mangle Dulce" mixed in with creosote, Cholla, Palo Verde, Cardone, and Elephantoprium. One female had two embryos of 6 mm each, the other no embryos. The male had enlarged testes of 9 mm. This species of *Perognathus* is the most insolent of the mice caught so far, each individual being extracted from the live traps only with great difficulty, and always accompanied by squealing, jumping and biting. (#154, 155, 156)

June 7 Punta Gasparino, 10<sup>+</sup> ft, 23°16'N, 110°9'W, Baja California  
5♂ + 4♀ (#316-324 incl.) caught in sand dune area last night. Live traps (48) were set just south of camp among short dense shrubs growing on sea side of silty sand dunes. The females had no embryos. These mice seem larger and much more mild tempered than those caught at Bahía Concepción.





Quast  
1948

Perognathus arenarius

2

June 8 Punta Gasparino, 10<sup>+</sup> ft, 23°16'N, 110°9'W, Baja California  
7♂, 6♀ (#325-337 incl) caught last night in 48  
live traps set among short dense shrubs on crest  
of sand dunes nearest the beach. Traps were baited  
with Sudan-grass seed and ran from camp southward.  
This is the only species of mouse caught in these  
dunes in two days of trapping. Most of the mice  
were caught around the areas of short, densely  
matted bushes, the population seeming to drop  
off in areas less densely vegetated. Saw a  
large rattlesnake in one of the bush clumps  
two nights ago at dusk. Number 337 was the  
only female containing embryos, having 4 of 4 mm  
each.

June 19 San Jorge 5<sup>+</sup> ft, 25°44'N, 112°07'W, Baja California  
7♂, 4♀ (377-387 incl) caught in Museum Special  
traps set last night in "Mangle Dulce" clumps  
along sand cliffs bordering estero north of  
camp. The "Mangle Dulce" grows next to  
the Mangrove of the estero but usually separated  
from it by at least the debris of high water  
mark, and usually a small strip of sand  
below the cliffs. Most of the traps were set  
on the top of the cliff within 10 feet of the edge,  
but a few set at the bottom of the cliff in  
sand but near the Mangroves also caught  
this species. Near the "Mangle Dulce" bushes large  
areas of crawling cactus were found and a





Oceast  
1948

Perognathus arenarius

3

June 19 ~~San Jorge, 5<sup>+</sup> ft, 25°44'N, 112°07'W, Baja California~~  
few Ocotillo and an occasional Lumbi. The character of the sand is such that it packs firmly, being fine and of a reddish tint. The Museum Special were baited with walnut. One Perognathus baylei was also caught in this habitat.

48 live traps set among Ocotillo, Lumbi, and Pitaya agria clumps on hill east of camp last night caught 9♂ + 8♀ of this species and also 2 Dipodomys merriami + one Perognathus baylei (#388-405 incl). This hill is about 100 yards east of the estero shore and probably about 75 feet high being composed of reddish hard-pack sand containing a few shells (probably of human origin). Mouse sign is abundant in this habitat and small burrows exceedingly common. The moon was almost full last night.

June 20 ~~Same~~  
Location 50 live traps set in same habitat but N.E. of camp caught 4♂ and 3♀. The females had no embryos. 1 Dipodomys merriami and one Perognathus baylei also caught in same habitat.

June 21 ~~Same~~  
Location Moved my live traps up to the north end of the estero last night. At that place a Mangrove thicket exists that extends about 100 yards north from the estero in boggy ground and is peculiar in the fact that it is made





Quast  
1948

Perognathus arenarius

4

June 21 San Jorge, 5+ ft,  $25^{\circ}44'N$ ,  $112^{\circ}07'W$ , Baja California  
~~up of short, small, Mangrove plants. Surrounding~~  
this mangrove extension is flat ground with  
small plants growing in it but still very wet  
and full of holes of burrowing crabs. Next  
to this area is a dry one in which the live traps  
were set followed by dry sand and *Ocotillo*  
& other plants of the sandy region. Dry soil  
existed on one side of a row of "Mangle Dulce"  
with the wet bog on the other. Live traps set  
along the "Mangle Dulce" row on the dry side  
caught, two of this species.





Quast  
1948

Perognathus baileyi

1

April 16 Cerro de Centinela 300 ft, 13 mi WSW Mexicali,  
Baja California

Three males caught in live traps baited with ground corn on alluvial material below bare mountain slope. (#55, 56, 57). Traps set the night of 15<sup>th</sup> and gathered at sunrise on the 16<sup>th</sup>.

April 18 Cerro Prieto 30 ft 20 mi SSE Mexicali, Baja California

One male caught in rocks 15 ft from mesquite-sand association in draw (#74).

May 6 Bahia Concepcion, 13 mi SE Mulege, Baja California

One female having no embryos and very fat caught in sandy area in back of shell beach and below lava rocks. Caught among large, separated bushes growing in coarse washed sand. Specimen #147

May 7 Same Location. One male (#150) caught in live traps set among "Mangle Dulce" bushes, Cuscuta, Palo Verde, Cholla, and Cardone in sandy area behind beach N.E. of camp last night. The specimen had enlarged testes of 15 mm.

May 17 Triunfo, 1700 ft, Baja California

One male and one female (1 Emb. 20 mm) caught in live traps set in abandoned cornfield which was surrounded by a brush fence. Both specimens were caught in sandy soil under brush with no rocks nearby. Specimens cataloged nos. 194 + 195

June 17 Wend Llano de Hiray, 50± ft, Baja California

10♀ and 11♂ caught last night in 47 live traps





Quast  
1948

Perognathus baileyi

2

June 17 ~~Went to Llano de Hiley, 50<sup>+</sup> ft., Baja California~~  
set in dry lake bottom. The juvenile and immature  
specimens were released, leaving the series # 363-369  
incl. Of the two female specimens, one had 2 embryos  
on the right side of 7mm, and the other none. This  
species was caught in the lake-bottom proper and  
also around small hillocks of sand intermediate  
between it and the sand dunes. Growing in the  
lake bottom in a fairly even cover and on the  
small sand hillocks is several kinds of very  
short bushes from 3 inches to a foot high. In  
hillocks beneath these bushes, Perognathus baileyi  
burrows are common and their tracks are every-  
where in the more sandy places.

When many of the specimens were released from  
the live traps they continued to stay around camp  
and became at ease around the place, eating and  
sitting under the table and around our feet with  
no apparent fear at our presence. Several specimens  
that were almost too cold to move this morning  
were covered with a piece of paper and showed  
a great attraction for it later when they would  
move to follow it when we changed its position.  
Minimum temperature last night was 53° F. Several  
very young specimens were caught, still having  
very fine hair with their pink skin showing through.

June 18 ~~San Jorge, 5<sup>+</sup> ft., 25°44'N, 112°07'W, Baja California~~

Two caught last night, one female in Museum





Quast  
1948

Perognathus baileyi

3

- June 19 ~~San Jorge, 5<sup>+</sup> ft 25°44'N, 112°07'W, Baja California~~  
Special traps set under Mangro Dulce bushes  
close to the estero shore and one male (#398)  
in live traps set on hillside about 75 yards  
east of camp. Of the other species caught in  
the live traps ~~the~~ (Perognathus arenarius + Dryadomyza  
merriami) this species was a decided minority.
- June 20 ~~Same~~ Location. One female #408 caught last night  
in live traps in same habitat as above.





Quast  
1948

Perognathus fallax

April 25 ~~12 1/2 mi by road south of El Marmol 2200 ft Baja California~~

One female (#94) caught in fine gravel wash among large granite boulders. Specimen had no embryos. Temperature dropped to 43°F last night but specimen was healthy and active this morning.

July 15 ~~8 mi N. Rosario, Baja California~~

One male #459 caught in Museum special set near dense brush at base of hill west of camp last night.





Quast  
1948

Perognathus

formosus

1

April 9 Punta San Felipe, 50<sup>+</sup> ft, Baja California

Two females and one male caught last night  
on hill 200 yds. west of camp. The live traps  
were set in the boulder-strewn water courses  
and on the intervening rises between them. All  
traps were set well up on the steep hillside  
at least 50 yds from the base of the hill.  
The Perognathus formosus were caught mainly  
on the flat ground on top of the rises,  
the traps in the water-courses yielding  
Peromyscus erinitus. A few spots with soil  
beneath Encelia bushes were honeycombed  
with burrows, possibly of the formosus  
species.

8:45 P.M. ten mouse traps (museum special)  
set before dark caught three Perognathus formosus  
females. Traps set along trail leading west of  
camp in area between talus slope and sea shore.  
Area sand and rocks with Encelia and Cercote.  
Two specimens put up - nos. 18 + 19.

April 10 Five caught, 3 ♀ + 2 ♂, on rocky hillside east  
of camp at least 100 yards from desert association  
of sand, ocotillo and creosote. Other mammals  
caught in accompanying live traps were  
Perognathus spinatus and Peromyscus erinitus.

April 12 9 mi W. Punta San Felipe, 200<sup>+</sup> ft, Baja California

One caught on decomposed granite hillside  
with a Perognathus spinatus + a Peromyscus erinitus, #45.  
(50 traps set)





Quast  
1948

Perognathus formosus

2

April 15 Cerro de Centinela 300 ft 13 mi WSW Mexicali,  
Baja California

Two caught in live traps baited with  
ground whole corn in small meandering wash  
in alluvial material below rock mountain.  
Specimens put up by Teves and Murray +  
cataloged in their books under this date.





Quast  
1948

Perognathus penicillatus

April 18 Cerro Prieto 30 ft 20 mi SSE Mexicali Baja California  
~~Four~~<sup>Five</sup> caught last night in rocks within 20  
feet of desert sand. (#69, 71, 72, 73, + 75). Traps  
located near or under creosote and mesquite.





Quast  
1948

Petrognathus spinatus

1

April 10 Punta San Felipe, 50<sup>±</sup> ft, Baja California

Four ♂, six ♀ in rocky mountainside east of camp. Traps set mainly on rises between gullies and near burrows beneath Encelia bushes. Animals caught at night in live traps set approximately 30 ft apart and were accompanied by ~~four~~<sup>five</sup> Petrognathus formosus and two Peromyscus crinitus. Traps set at least 100 yds from desert association.

April 12 9 mi W. Punta San Felipe, 200<sup>±</sup> ft, Baja California

One caught on decomposed granite hillside with one Petrognathus formosus and a Peromyscus crinitus. 50 live traps were set. #44.

April 15 Cerro de Centinela, 300 ft 13 mi WSW Mexicali; Baja California

Four caught in live traps baited with ground whole corn in small meandering wash in alluvial material below rock mountainside. Specimens put up by Tevis and Murray and cataloged under this date.

April 16 One ♂ + one ♀ caught on alluvial material in live traps baited with ground whole corn at night of the 15<sup>th</sup> (#54 + 59).

April 18 Cerro Prieto 30 ft 20 mi SSE Mexicali, Baja California

Four caught in rocks (lava) within 50 ft of mesquite-sand association.





Quast  
1948

Perognathus spenatus

2

- May 4 Mulege 25<sup>+</sup> ft Baja California  
5 ♂ caught in lava rock above creek  
by Dr. Benson and Tevis last night. Specimens  
put up by the two and caught in Museum  
Specials baited with walnut.
- May 5 Bahia Concepcion 13 mi S.E. Mulege, Baja California  
Two males and two females caught in rocks  
above sandy area in back of beach last night.  
The males had enlarged testes, 7 and 14 mm, but  
no embryos were found in the females. Growing  
in the sand below the rocks are Mesquite, Cardon,  
Cholla, and Pitaya. Caught in same habitat  
were *Peromyscus eremicus* (2♀).
- May 7 Same Location. Two males and one female (#151,  
152, 153) caught among large "Mangle Dulce" bushes  
growing in sandy area behind shell beach N.E. of  
camp. Other plants growing in area were Creosote,  
Cholla, Cardon, *Elephantopus* and Palo Verde.  
One male had testes of 13 mm, the female had no  
embryos.
- May 8 Rancho Cadeji S.W. end Bahia Concepcion, Baja California  
Two males (#157, 158) caught in live traps set  
on rocky hillside west of road. Only two animals  
were caught in 49 traps set. Sparse vegetation  
among the rocks - barrel cactus, *Elephantopus*,  
Palo Verde, Creosote, and Cardon. Testes 15 and 11 mm.
- May 15 4 miles N. La Paz, Sea Level, Baja California  
One male (#182) caught in live traps set on





Quast  
1948

Perognathus spinatus

3

- May 15 ~~4 miles N of La Paz, Sea Level, Baja California~~  
rocky hillside east of camp. Growing in that area were Ironwood, *Elaeagnus*, *Opuntia cholla*, *Lumbei* and *Cardone*. Specimen had enlarged testes
- May 16 Same Location. One male (#184) caught on rocky hillside east of camp last night.
- May 17 ~~Trinidad, 1700 ft, Baja California~~  
Six males + one female caught last night on inside of brush fence surrounding an abandoned cornfield about 100 yards long and 30 yards wide. Field was of sandy soil surrounded by rocky soil on which the fence was built. All the *P. spinatus* were caught on or near the rocks. All the males had enlarged testes; the female had no embryos. Specimens cataloged nos. 187-193 incl. All the specimens here were larger and heavier than those of the La Paz district and parts north of there.
- May 18 Same Location. 47 live traps set in same locations as previous night (see paragraph above) yielded 3♂ (#200, 201, 208) and 4♀ *P. spinatus*. None of the females were pregnant although one was lactating. All males had enlarged testes.
- May 20 Same Location. Three males and one female (#220-223 incl) caught in same location last night as traps had been set twice before, namely along brush fence just east of camp. The female had no embryos.





Quast  
1948

Perognathus spinatus

4

May 23 Buena Vista, 25<sup>+</sup> ft, 23°35'N, 109°41'W, Baja California

One male and one female (#238, 239) caught in live traps set last night along brush fence surrounding a vegetable field in an arroyo (wash) north of camp. About twenty of the fifty traps were set along the fence, the remainder being set in the wash proper among the Lumboi, Palo Verde and Mesquite in likely looking spots. The brush fence only yielded mice and only the above two were caught. One possible explanation for the low yield is that there was a full moon last night with no overcast. The female was lactating but contained no embryos.

June 3 6 mi N. San Jose del Cabo, 250<sup>+</sup> ft, Baja California

Two males and two females caught last night in live traps set along base of hillside at border of sandy wash. 100 yards south of here. Neither of the females had embryos. Animals caught among rocks in which Lumboi, Mesquite, Cardone, Pitaya dulce, and Prickly pear were growing. Specimens #306-309 incl.

June 7 Punta Gasparino, 10<sup>+</sup> ft, 23°16'N, 110°9'W, Baja California

Several caught in live traps last night by Murray and Teo. Traps were set in beginning of rocky soil about 100 yds back of beach.





Quest  
1948

Dipodomys agilis

April 21 Agua Hedionda  $32^{\circ}30'N$   $116^{\circ}16'W$  Baja California

One female (#81) caught in live traps baited with bird seed and set among Redshank soil covered with thick layer of Redshank debris with granite gravel base. Temperature dropped to  $32^{\circ}F$  during the night, but the specimen was still living when picked up in the morning although in a very torpid state.

April 25  $12\frac{1}{2}$  mi by road south of El Marmol, 2300 ft Baja California

One female caught (#93) in wash among large granite boulders last night. Temperature dropped to  $43^{\circ}F$  last night, but the specimen was healthy and active when the trap was opened in the morning.

June 21 San Jorge,  $5\pm$  ft,  $25^{\circ}44'N$ ,  $112^{\circ}07'W$ , Baja California

Several caught by Tevis + Murray on hill east of camp at this location.





Quast  
1948

Dipodomys merriami

1

April 7 E. side Cocopah mts, 21 mi SSE Mexicali, Baja Calif.

1 ♂ + 1 ♀ caught at night in open space on coarse sand wash on alluvial fan.

April 17 Cerro Prieto, 30 ft 20 mi SSE Mexicali, Baja Calif.

None caught by my live traps since above.

April 25 12<sup>1</sup>/<sub>2</sub> mi by road south of El Marmol, 2200 ft Baja California

One male + one female caught last night in fine gravel wash among boulders (#91, 92). The female had one embryo of 18 mm. Temperature dropped to 43° F last night and specimens were in a sluggish state when the traps were opened this morning.

April 28 30 mi SE Mesquite, 600 ft Baja California

Two males caught (#101, 102) in sand under cholla and grease-wood last night. Traps set at 9:30 P.M. and were baited with bird seed.

May 4 Mulege, 25<sup>+</sup> ft Baja California

One male Dipodomys merriami caught by Dr. Benson in Museum special trap baited with walnut and set in sandy wash last night. Growing in the wash was Mesquite, Creosote, and Palo Verde. Specimen was put up by myself (#127).

May 7 Bahia Concepcion, 13 mi S.E. Mulege, Baja California

One female (#149) caught in live traps set among large "Mangle Dulce" bushes in sandy wash N.E. of camp last night. Traps were baited with bird seed. The female contained no embryos.





Quast  
1948

Dipodomys merriami

2

June 3 6 mi N. San Jose del Cabo, 250<sup>±</sup> ft, Baja California

One caught here by Murray last night.

June 17 W. end Lago de Huey, 50<sup>±</sup> ft, Baja California.

One male (#320) caught in rat trap baited with walnut last night. Specimen was caught in edge of sand dune near lake bed. Sign plentiful in sand and burrows common among Ocotillo and Cholla growths. The sand dunes are found on the periphery of the long series of wet weather lake beds that occur in this region. None were caught in 100 live traps set in flat lake bottom among short bushes and on dry, cracked mud by Dr Benson and myself. Perognathus baileyi on the lake bottom with a few on the sand dunes. Dipodomys merriami on the sand dunes but not extending into the flat, packed soil.

June 18 San Jorge, 5<sup>±</sup> ft, 25°44'N, 112°05'W, Baja California

Two males caught #388, 389 in hard packed sand of hill east of camp last night. Specimens caught in live traps baited with Bermuda grass seed along with Perognathus arenarius and baileyi. Habitat of open hard-packed reddish sand between clumps of Ocotillo, Frutia, Cholla, Pitaya agria and Lumbei—most of which are heavily parasitized with Orchilla.





Quest  
1948

Depodomys merriami

3

June 20 San Jorge, 5<sup>+</sup> ft, 25°44'N, 112°07'W, Baja California

One female #406 (No Embs) caught in live traps in same habitat as previous night.

June 23 Santa Rosalillito, 25<sup>+</sup> ft, SE end Bahía de Concepcion, Baja Calif.

One male #435 obtained in forty-eight live traps set on sandy, flat ground bordering wash at this place. Slightly less than a full moon tonight and last night. The area is heavily grazed by cattle and the vegetation - *Pitaiya agria*, *Sarcobolus*, *Cardon*, *Mesquite* occurs in widely separated mounds with clear sand in between. Around these patches of vegetation the sand has been built up in mounds and in these sand mounds burrows are common. Traps set near and under these vegetation patches ~~caught~~ caught one of this species and two *Perognathus arenarius*.

Traps set by others of the group last night caught nothing.





Quast  
1948

Reithrodontomys megalotis

April 24 Mission San Fernando, 1500 ft, Baja California

Three caught, males, in association of bunch grass, tule and mesquite in marsh below the mission. Traps baited with walnut. Specimens #88, 89, 90. Temperature dropped to 32°F last night and it was clear, with a full moon. Traps set within 100 feet of running water.





Quast  
1948

Peromyscus californicus

April 21 Agua Hedionda  $32^{\circ}30'N$   $116^{\circ}16'W$  Baja California  
~~Agua Hedionda~~  
Two caught, 1 ♂ + 1 lactating ♀, in leaf  
debris under Redshank. One caught in live  
trap baited with birdseed, the other in a  
Schuyler trap baited with dried peach and  
set next to granite boulder. Temperature  
dropped to  $32^{\circ}$  during night, but specimen  
in live trap remained alive and apparently  
healthy. (#82 + 83).





Quast  
1948

Peromyscus crinitus

- April 10 Punta San Felipe, 50<sup>±</sup> feet, Baja California  
2 caught in live traps set among rocks  
on large hill east of camp.
- April 12. 9 mi W. Punta San Felipe, 200<sup>±</sup> ft, Baja California  
One caught on decomposed granite hillside  
with one *Perognathus sparatus* and one  
*Perognathus eremicus*. 50 live traps were  
set. #46.
- April 15 Cerro de Centinela, 300 ft, 13 mi WSW Mexicali,  
Baja California  
Two caught in live traps baited with  
ground whole corn in small meandering wash  
in alluvial material below rock mountainside.  
Specimens put up by Tevis & Murray and  
cataloged in their books under this date.
- April 16 2♂ + 2♀ caught in live traps night of 15<sup>th</sup>  
on alluvial material below bare mountain  
slope. Traps were baited with ground whole corn.  
(#51, 52, 53, + 59).





Quast  
1948

Peromyscus eremicus

1

April 11 Punta San Felipe, 50<sup>±</sup> ft, Baja California

One caught in live trap set on rocky slope of mountain in back of camp. Specimen escaped in process of killing.

April 18 Cerro Prieto 30 ft 20 mi SSE Mexicali, Baja California

Two females with embryos caught in rocks 10 feet from mesquite - mud flat association last night.

May 5 Bahia Concepcion 13 mi SE Mulege, Baja California

Two females with embryos caught in rocks above sandy area in back of beach. Specimens (#136 & 137) had embryos of 4 and 11 mm. #136 had two embryos on its left side, #137 had one on each side. Sandy area contained Cholla, Cardone, Mesquite, and Pitaya. Caught in same habitat were 4 Perognathus spinatus.

May 10 San Jose de Comondru 700 ft, Baja California

Four females (164-167 incl) caught in live traps set along running water of ditch at arroyo bottom. Specimens were caught in traps set near town in bermuda grass and beneath the palm trees. None of the females had embryos. One had a swollen uterus. Live traps were baited with bird seed.

May 15 4 miles N La Paz, Sea Level, Baja California

3 ♂ and one ♀ (#178-181 incl) caught in live traps baited with bird seed last night. Traps were set among porous lava rock fragments on hillside east of camp. Female had two embryos.





Quast  
1948

Peromyscus eremicus

2

May 16 4 miles N of La Paz, Sea Level, Baja California  
One ♀ (#183) caught last night on rocky hillside east of camp. Specimen was lactating and had two embryos..

May 18 Trunfo, 1200 ft, Baja California

One male and one female (#206, 207) caught in live traps set around inside of brush fence last night. Brush fence surrounds an abandoned cornfield about 100 x 50 yards in extent. The female contained no embryos. Traps set in same location previous night caught no Peromyscus.

May 20 Same Location. One ♀ (#224), with no embryos caught in live traps set along identical route as traps had been set twice before.

June 12 La Laguna 6200 ft, Sierra de la Laguna, Baja California

2 ♂ (#348, 349) caught last night in Museum special traps baited with walnut. Traps were set in rocky canyon at east end of La Laguna among willows, grass, and large granite boulders. All traps were set within 5 feet of a running stream. Caught in same habitat as Peromyscus truei.

July 12 24 mi NW Punta Prieta, 2000± ft, Baja California

One male #452 caught in live traps set on rocky hill west of camp last night (see Journal pg 150). None of the 47 other traps were disturbed.





Quast  
1948

Peromyscus maniculatus

1

April 21 Agua Hedionda, 32°30'N 116°16'W, Baja California

Three caught, 1 ♀ 2 ♂, last night in leaf debris under Redshank. Temperature dropped to 32°F during the night but specimens remained alive and active and had to be killed in the morning (#84, 85, 86) Live traps baited with bird seed.

April 24 Mission San Fernando, 1500 ft, Baja California

Three caught, one saved (#87) in bunch grass-tule-mesquite association in marsh below the mission. Traps were baited with walnut and set in cow paths and along edge of water. Minimum temp last night was 32°F, it was clear with a full moon.

June 20 San Jorge, 5+ ft, 25°44'N, 112°05'W, Baja California

One male caught (#407) in 50 Museum Special traps baited with walnut and set along thin strip of mangroves N. of camp last night (see map Journal pg. 130). The mangroves in this region are from five ~~ft~~ to twenty feet deep and extend from 20 feet N. of camp to a large mangrove thicket at the north end of the estero. All the traps were set on top of accumulated mangrove leaves and debris deposited at the high-tide mark and as a result were set for the most part under the branches of the mangroves. This is the place where last night's specimen was caught. Almost a full moon last night.





Quast  
1948

Peromyscus maniculatus

2

June 21 San Jorge, 5<sup>+</sup> ft, 25°44'N, 112°07'W, Baja California  
~~unimulpa, unimulpa, unimulpa, unimulpa, unimulpa~~  
Three males (417, 418, 419) and one immature  
male caught in Museum Special traps baited with  
walnut and set at north end of estero last  
night. Traps were set in area bordered by "Mangle  
Dulce" on one side and a thick, stunted mangrove  
thicket on the other and on boggy ground full  
of crab burrows on which composite plants formed  
a sparse cover. The specimens were caught in  
traps set under the Mangroves and "Mangle  
Dulce" and the greater percentage of the traps  
set in the boggy open area between yielded  
nothing but several crab pincers. The line of  
"Mangle Dulce" bushes formed the dividing line  
between dry and boggy ground and the Peromyscus  
maniculatus were caught under them on the  
wet side while Perognathus arenarius were caught  
on the dry side in live traps only a few feet away.

Dr. Benken, Lewis and Murray have been  
consistently setting their Museum Special in  
and on top of the Mangroves in the thickets south  
and north of camp and have caught a great  
number of this species, the number caught drop-  
ping off very rapidly as the traps leave the  
mangroves. Although the mangroves are flooded  
by the high tides, it is evident that this species  
prefers and spends its entire time in the  
mangroves. In this area it is not to be





Q east  
1948

Peromyscus maniculatus

3

June 21 San Jorge, 5<sup>+</sup> ft, 25°44'N, 112°07'W, Baja California  
~~San Jorge, 5<sup>+</sup> ft, 25°44'N, 112°07'W, Baja California~~  
caught far from their dark, damp, cover.  
Traps set in the higher branches of the mangroves  
caught this species.

The series caught is highly variable in  
weight and size in relation to pelage state.





Quest  
1948

Peromyscus truei

June 12 ~~La Laguna, 6200<sup>+</sup> ft, Sierra de la Laguna, Baja Calif~~

Two caught last night in Museum Special traps baited with walnut. Traps were set in canyon where the stream exits the flat, and set among willow, grass and large granite boulders. Neither of the specimens (#350, 351) had embryos. These were caught in the same habitat as two Peromyscus eremicus. All traps were set within 5 feet of running water.

Peromyscus truei have also been caught near other springs & streams about La Laguna by others of this group.

June 13 <sup>Same</sup> Location Two males caught in same trap line as above last night. One was so badly eaten by ants it had to be abandoned. Both were caught within 4 feet of the running water under dense willows and near green grass. No Peromyscus eremicus caught in trap line last night.











Quest  
1948

Neotoma lepida

2

May 18 Triunfo, 1200 ft, Baja California

One caught by Tevis at 5:00 P.M. in the afternoon in Schuyler trap baited with dried apple. Trap was set beside a brush fence just east of camp. Species very abundant in this area.

May 26 El Carrizalito, 1400 ft, 5 mi N. Santiago, Baja California

One male and one female (#262, 263) caught in Schuyler traps set around and in granite boulders on a hillside 200 yards from camp. Female had 2 emb of 37 mm apiece. Traps were set last night and baited with dried peaches and apricots dried apples.





Quast  
1948

Ondatra gibethica

April 17 Cerro Prieto 30 ft 20 mi SSE Mexicali Baja Calif.  
~~~~~

One seen in small irrigation ditch approx  
3 mi N. Cerro Prieto at about 5:30 P.M. yes-  
terday. Ditch was bordered by tules.





August  
1948

Canis latrans

April 11 Punta San Felipe, 50<sup>+</sup> ft, Baja California

One seen 6:30 A.M. 100 yds west of camp.  
The coyote came up from the beach to a  
round pile of stones near which the carcass  
of another coyote trapped by Dr. Benson  
was lying. It ran off when I called to  
Dr. Benson.

April 29 Mission San Ignacio - 500 ft, Baja California

Heard at Punta Prieta, and a sad en-  
counter with them at our camp near El  
Arco. At the El Arco camp I had two  
traps carried off by them and Tevis had  
two live traps badly chewed and man-  
gled although they were not heard that  
night.





# Species Accounts

## Reptiles





Quast  
1948

Phyllodactylus unctus

May 10 ~~San Jose de Comondú~~ 700 ft Baja California  
Specimen no. 168 caught at 8:15 last  
night on lava boulders  $\frac{3}{4}$  mile SW of town.  
The air was beginning to cool at that time,  
but the substrate on which the specimen was  
found felt quite warm to the touch. The  
habitat was large lava boulders with rocky  
and powdery soil in between in which *Opuntia*  
*cholla*, creosote and other desert shrubs were  
growing. The boulders were about 70 feet  
from the sandy arroyo floor with its palm  
trees and about an equal distance from  
lava cliffs overhead. Subsequent searching  
revealed no other geckos in the area. Minimum  
temperature last night was  $56^{\circ}\text{F}$ , it being  
quite cool at 11:00 PM last evening.





























